K 40

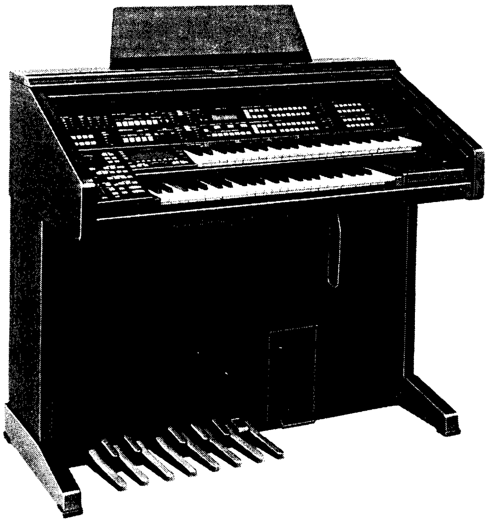
ORDER NO. EMID881222
A4 3870

Service Manual

Electronic Organ

SX-GX5

(M), (MC), (EN), (EI), (EH), (EB), (EF), (EZ),
(EW), (EP), (EK), (XL), (XR), (XS), (X)



AREAS

(M):	U.S.A.	(EP):	Spain
(MC):	Canada	(EK):	the United Kingdom
(EN):	Norway, Sweden, Denmark, Finland	(XL):	New Zealand
(EI):	Italy	(XR):	Australia
(EH):	Holland	(XS):	Malaysia, Singapore, South Africa
(EB):	Belgium	(X):	the Middle East, Indonessia, Hong Kong, the Philippines, Taiwan
(EF):	France, Austria		
(EZ):	Germany		
(EW):	Switzerland		

Specifications

KEYBOARD			UPPER MANUAL 49 KEYS, LOWER MANUAL 49 KEYS, PEDAL KEYBOARD 13 KEYS, FULL BASS PEDAL 1 KEY
DIGITAL DISK RECORDER			○ (U.S.A.) OPTION (Except U.S.A.)
FULLBAND SETTING COMPUTER			FSC, RECORD*, 1—5 (UPPER KEYBOARD)
ONE TOUCH PLAY			MARCH 1, 2, COUNTRY, DIXIE, SWING, BALLAD, JAZZ WALTZ, WALTZ, TANGO, RHUMBA, CHA CHA, GUARACHA, REGGAE, SALSA, SAMBA, BOSSA NOVA, 8 BEAT 1, 2, 16 BEAT 1, 2, SWING ROCK, DISCO 1, 2, SHUFFLE, BAROQUE, ORCHESTRA, POLKA, GIGUE, VIENNESE, BIGBAND, COMBO, ROCK'N'R...MUSICAL DIRECTOR
PLAY SEQUENCER			BASS, LOWER, UPPER, SOLO, RECORD*
VOICE SETTING COMPUTER			SET, 1—7, CANCEL
ORCHESTRAL CONDUCTOR			UPPER ...TAB, ORGAN, STRING ENSEMBLE, VOCAL ENSEMBLE, POLY, SPECIAL, SOLO LOWER...TAB, ORGAN, STRING ENSEMBLE, VOCAL ENSEMBLE, POLY, SPECIAL, SOLO
UPPER TONES	TAB & ORGAN	TAB	FLUTE 16′, 8′, 5-1/3′, 4′, 2-2/3′, 2′, 1′ PERC 4′, 2-2/3′, TAB CANCEL, VOLUME
		ORGAN	ORGAN PRESETS 1—5, ORGAN PROGRAM 1—4 (PIPE ORGAN 1—4, ENT ORGAN 1—4, JAZZ & ROCK ORGAN 1—8...MUSICAL DIRECTOR)
	POLY		PIANO, ELECTRIC PIANO, HARPSICHORD, VIBRAPHONE, BANJO, GUITAR, JAZZ GUITAR, HAWAIIAN GUITAR, BRASS, OCTAVE BRASS (4 NOTES), FRENCH HORN, TENOR SAX, ACCORDION, SYNTH BRASS, SYNTH PERC 1, 2, VOLUME
	SPECIAL		PIANO, ELECTRIC PIANO, GLOCKEN, JAZZ GUITAR, HARP, SYNTH BRASS, STRING ENSEMBLE, VOCAL ENSEMBLE, TRUMPET, FLÜGELHORN, ALTO SAX, CLARINET, VOLUME
			PROGRAM PITCH (VARIABLE, OCTAVE, NOTE, DETUNE...MUSICAL DIRECTOR)
	SOLO		VIOLIN, HARMONICA, WHISTLE, PAN FLUTE, SYNTH LEAD 1, 2, TROMBONE, TRUMPET, ALTO SAX, CLARINET, OBOE, FLUTE, VOLUME
	STRING/VOCAL ENSEMBLE		VOLUME

LOWER TONES	TAB & ORGAN	TAB	FLUTE 8′, 4′, 2-2/3′, 2′, 1′, TAB CANCEL, VOLUME
		ORGAN	ORGAN PRESETS 1—4, ORGAN PROGRAM (PIPE ORGAN 1—4, ENT ORGAN 1—4, JAZZ & ROCK ORGAN 1—8...MUSICAL DIRECTOR)
	POLY		PIANO, ELECTRIC GRAND, ELECTRIC PIANO, HARPSICHORD, BANJO, GUITAR, JAZZ GUITAR, CLAVI, BRASS, OCTAVE BRASS (4 NOTES), FRENCH HORN, TENOR SAX, ACCORDION, SYNTH BRASS, SYNTH PERC 1, 2, VOLUME
	SPECIAL		○ (U/L)
	SOLO		○ (U/L)
	STRING/VOCAL ENSEMBLE		VOLUME
BASS TONES			ACOUSTIC, ELECTRIC, CHOPPER, SYNTH 1, 2, BASS 16′, 8′, PIPE ORGAN, STRING ENSEMBLE, TUBA, VOLUME
EFFECT	TREMOLO		UPPER TAB & ORGAN, LOWER TAB & ORGAN, TREMOLO SLOW/FAST (TREMOLO SPEED-BASS, TREBLE...MUSICAL DIRECTOR)
	CHORUS		UPPER POLY, LOWER POLY, U & L SPECIAL, U & L SOLO
	CELESTE		UPPER TAB & ORGAN, LOWER TAB & ORGAN, UPPER POLY, LOWER POLY, U & L SPECIAL, U & L SOLO
SLOW ATTACK			UPPER TAB, LOWER TAB
SUSTAN			UPPER (CONTROL, OFF), U/L SPECIAL (CONTROL, OFF), LOWER (CONTROL, OFF) BASS (CONTROL, OFF)
DIGITAL REVERB			MODE (ROOM, HALL 1, 2, 3), DEPTH (CONTROL, OFF)
GLIDE			○ (FOOT SWITCH)
TECHNI-CHORD			○ (CLOSED, OPEN 1, 2, DUET...MUSICAL DIRECTOR)
RHYTHM	SELECTORS		MARCH 1, 2, COUNTRY, DIXIE, SWING, BALLAD, JAZZ WALTZ, WALTZ, TANGO, RHUMBA, CHA CHA, GUARACHA, REGGAE, SALSA, SAMBA, BOSSA NOVA, 8 BEAT 1, 2, 16 BEAT 1, 2, SW ROCK, DISCO 1, 2, SHUFFLE...MUSICAL DIRECTOR
	CONTROLS		START/STOP, SYNCHRO & BREAK, BALANCE (DRUMS), TEMPO/PROGRAM, DRUMS (MELLOW, VARIATION)

Technics

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

Matsushita Services Company
50 Meadowland Parkway,
Secaucus, New Jersey 07094

Panasonic Hawaii, Inc.
99-859 Iwaiwa Street
P.O. Box 774
Honolulu, Hawaii 96808-0774

Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
Ave. 65 De Infanteria, Km.9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

3870

BACK GROUND SOUND		THUNDER, WIND, BIRD, WAVES, BELLS, CANCEL, BALANCE
KEYBOARD PERCUSSION		LOWER KEYBOARD...36 KEYS
FILL IN & INTRO		1, 2, SOLO
ENDING		○ VARIATION
ACCOMPANY		RHYTHMIC, MELODIC, VARIATION, BALANCE
COMPOSER		1—6, RECORD*, (UPPER KEYBOARD) 1—16, PRESET PATTERN ①, ②, ③, CLEAR, BEAT, 2ND BAR, TRIPLET, ACCENT, SELECT, (LOWER KEYBOARD) KEYBOARD PERCUSSION
RHYTHM SEQUENCER		ON, RECORD*
PLAY MODE	PLAY MODE	FINGERED, MEMORY
	PROGRAM CHORD COMPUTER	PCC, RECORD*, (LOWER KEYBOARD) 𝄞—, ◄, ►, ⌒, ⌒, ‖, 𝄋 𝄌, *D.S.*, —‖, ⊂⊃, ⇥ ⇤
TEMPO SET		SET, 1, 2, MANUAL, FINE, TEMPO/PROGRAM
BASS SOLO		ON
TRANSPOSE		UP (+D♭, +D, +E♭, +E, +F, +F#) DOWN (−B, −B♭, −A, −A♭, −G)
TUNING		TUNING (434~446Hz), ORCH TUNING...MUSICAL DIRECTOR
MUSICAL DIRECTOR		RHYTHM, ONE TOUCH PLAY, SOUND PROGRAM, MIDI & CONTROL, 1—4, 8 SELECTORS
MUSICAL DISPLAY		○
PROGRAM FUNCTION SWITCH		FOOT SWITCH L, R, KNEE LEVER, FULL BASS PEDAL, RECORD*
MIDI		MIDI PROGRAM CHANGE MIDI PART (BASS, LOWER, UPPER, SOLO), OCTAVE, P CHANGE, EFFECT, SUSTAIN, FSC EN, SONG SELECT, MIDI CLK, START/STOP...MUSICAL DIRECTOR

TERMINALS (Below the lower keyboard)	PHONES .....use headphones with 16Ω impedance MIC.............input level 7.5mV, 10KΩ, MIC VOLUME LINE OUT ...output level 300mV, 600Ω 2CH output (L, R...Phono Jacks)
TERMINALS (On the rear panel)	AUX IN ....input level 500mV, 30KΩ L, R/R+L terminals LINE OUT ...output level 300mV, 600Ω 2CH output (L, R/R+L) 3CH output (3, 2, 1) SEPARATED LINE OUT...output level 500mV, 600Ω MAIN MIX ON/OFF, BASS, DRUMS (L, R/R+L), EXP/DIRECT MIDI............IN, OUT, THRU
OTHERS	POWER SWITCH, MAIN VOLUME, EXPRESSION PEDAL, INITIAL KEY (UPPER KEYBOARD)
OUTPUT	150W
SPEAKERS	30cm (11-13/16") × 1, 20cm (7-7/8") × 2, HORN TWEETER × 2
POWER REQUIREMENT	200W 270VA (Canada)
	AC 120/220/240V 50/60Hz, AC 120V 60Hz – NORTH AMERICA AC 220V 50/60Hz – EUROPE (EXCEPT FOR ENGLAND)
DIMENSIONS (W × H × D)	118.2cm × 103.4cm × 60.1cm (46-17/32" × 40-23/32" × 23-21/32")
NET WEIGHT (WITHOUT BENCH)	83kg (183 lbs.)
OPERATING CONDITIONS (DIGITIAL DISK RECORDER)	TEMPERATURE: 10°~40°C (50°~104°F) HUMIDITY: 20%~80%

NOTES: (*) Common RECORD button is used for these buttons.
Underlined tones also have sound variations.

CONTENTS

■ PART I (INTRODUCTION)

ARRANGEMENT OF CONTROL PANEL I-2
BASIC FUNCTIONS I-2
KEYBOARD RANGES I-6
CONNECTION TERMINALS I-7
HOW TO ASSEMBLE THE ORGAN I-8
SAFETY PRECAUTION I-9
PRECAUTIONS BEFORE SERVICING I-9
PARTS LOCATION I-11
DISASSEMBLY INSTRUCTIONS I-12
MEASUREMENTS AND ADJUSTMENTS I-14
HOW TO INSTALL THE DIGITAL DISK RECORDER I-15
SYMPTOMS WHICH APPEAR TO BE SIGNS OF TROUBLE I-15
ERROR DISPLAY I-17
MIDI IMPLEMENTATION CHART I-18

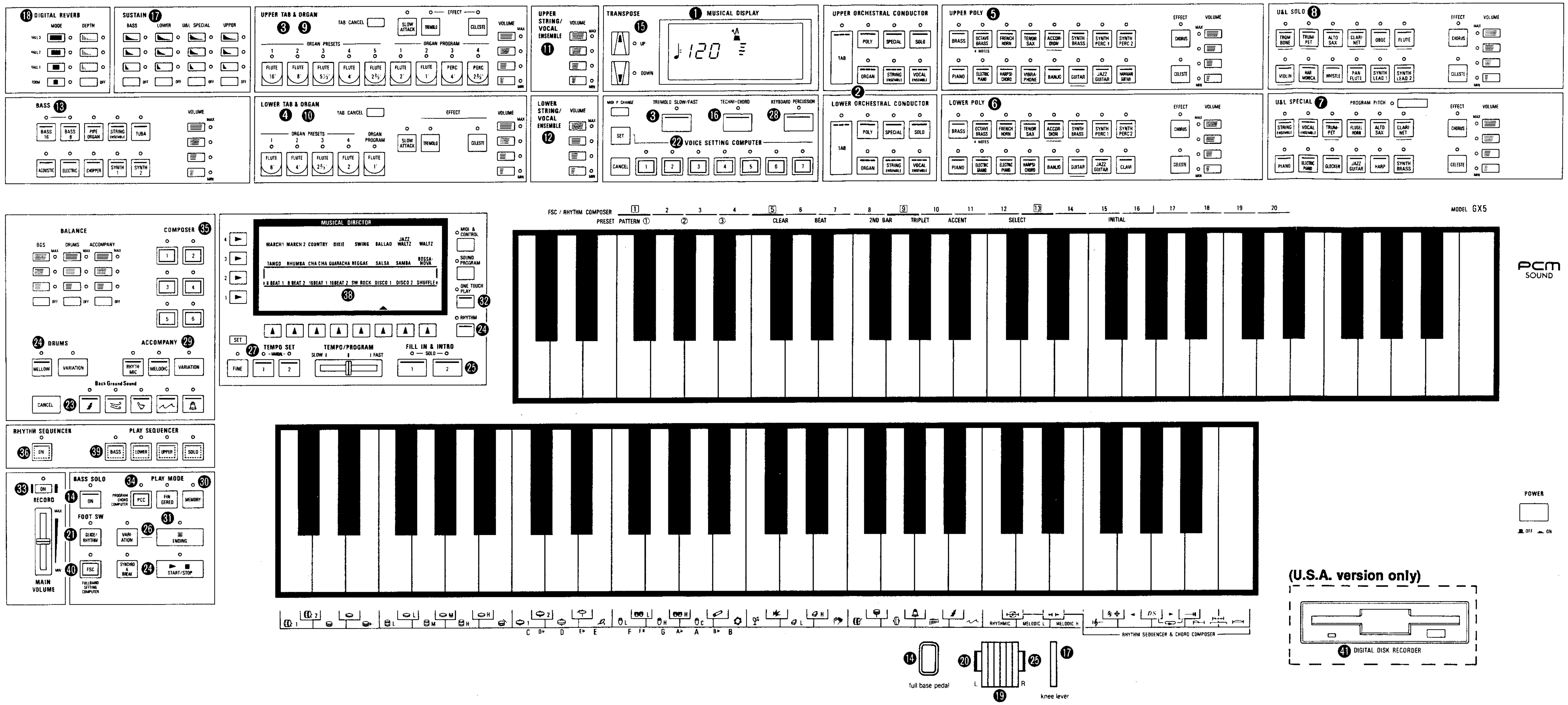
■ PART II (SCHEMATIC DIAGRAM)

WIRING CONNECTION DIAGRAM II-1
TOTAL BLOCK DIAGRAM II-3
MAIN MAIN CIRCUIT BOARD II-6
MAIN MAIN CIRCUIT DIAGRAM II-9
SG SOUND GENERATOR CIRCUIT DIAGRAM II-13
SG SOUND GENERATOR CIRCUIT BOARD II-17
EJ EFFECT, MIXING & JACK CIRCUIT BOARD II-19
EJ EFFECT, MIXING & JACK CIRCUIT DIAGRAM II-23
DRV DIGITAL REVERB CIRCUIT BOARD II-27
DRV DIGITAL REVERB CIRCUIT DIAGRAM II-29
MKB MANUAL KEYBOARD CIRCUIT DIAGRAM II-31
MKB MANUAL KEYBOARD CIRCUIT BOARD II-31
PKB PEDAL KEYBOARD CIRCUIT BOARD II-31
PKB PEDAL KEYBOARD CIRCUIT DIAGRAM II-32
EXP EXPRESSION CIRCUIT II-33
ACP PS PA NW AC POWER SUPPLY, POWER SUPPLY, POWER AMPLIFIER, NETWORK CIRCUIT BOARD II-34
ACP PS PA NW AC POWER SUPPLY, POWER SUPPLY, POWER AMPLIFIER, NETWORK CIRCUIT DIAGRAM II-37
CPL UPPER CONTROL PANEL LEFT CIRCUIT BOARD II-39
CPL UPPER CONTROL PANEL LEFT CIRCUIT DIAGRAM II-41
JACK JACK CIRCUIT II-43
CPC UPPER CONTROL PANEL CENTER CIRCUIT BOARD II-44
CPC UPPER CONTROL PANEL CENTER CIRCUIT DIAGRAM II-47
CPR UPPER CONTROL PANEL RIGHT CIRCUIT BOARD II-49
CPR UPPER CONTROL PANEL RIGHT CIRCUIT DIAGRAM II-51
CPSL LOWER CONTROL PANEL LEFT CIRCUIT BOARD II-53
CPSL LOWER CONTROL PANEL LEFT CIRCUIT DIAGRAM II-55
FDCU FDCL FDCN FD CONTROL UPPER, FD CONTROL LOWER, FD CONNECTOR CIRCUIT DIAGRAM II-57
FDCU FDCL FDCN CIRCUIT BOARD II-59

■ PART III (REPLACEMENT PARTS LIST)

REPLACEMENT PARTS LIST (P.C.B. and Wiring Parts) III-1
REPLACEMENT PARTS LIST (Cabinet and Chassis Parts) III-16
EXPLODED VIEWS OF CABINET III-18
PACKING III-23

ARRANGEMENT OF CONTROL PANEL



⑱ DIGITAL REVERB
SUSTAIN ⑰
UPPER TAB & ORGAN ③ ⑨
UPPER STRING/VOCAL ENSEMBLE ⑪
TRANSPOSE ⑮
① MUSICAL DISPLAY
UPPER ORCHESTRAL CONDUCTOR
UPPER POLY ⑤
U&L SOLO ⑧
BASS ⑬
LOWER TAB & ORGAN ④ ⑩
LOWER STRING/VOCAL ENSEMBLE ⑫
TREMOLO SLOW/FAST
TECHNI-CHORD
KEYBOARD PERCUSSION
㉒ VOICE SETTING COMPUTER
②
LOWER ORCHESTRAL CONDUCTOR
LOWER POLY ⑥
U&L SPECIAL ⑦
BALANCE
COMPOSER ㉟
MUSICAL DIRECTOR
㊳
㉔ DRUMS
ACCOMPANY ㉙
Back Ground Sound
㉓
RHYTHM SEQUENCER ㊱
PLAY SEQUENCER ㊴
TEMPO SET ㉗
TEMPO/PROGRAM
FILL IN & INTRO ㉕
㉜
BASS SOLO ⑭
PLAY MODE ㉞ ㉚
RECORD ㉝
FOOT SW ㉑ ㉖ ㉛
㊵ ㉔
MAIN VOLUME
FSC / RHYTHM COMPOSER
PRESET PATTERN
CLEAR
BEAT
2ND BAR
TRIPLET
ACCENT
SELECT
INITIAL
MODEL GX5
PCM SOUND
POWER
OFF ON
RHYTHMIC
MELODIC L
MELODIC H
RHYTHM SEQUENCER & CHORD COMPOSER
⑭ full base pedal
⑳ ㉕ ⑰
⑲
knee lever
(U.S.A. version only)
㊶ DIGITAL DISK RECORDER

BASIC FUNCTIONS

❶ MUSICAL DISPLAY
The rhythm tempo and beat are normally displayed. The display can also show the transposed chord or function as a stopwatch. If you use any of the various memories, their contents are displayed while you store or play back.

❷ ORCHESTRAL CONDUCTOR
These buttons allow you to select groups of voices and their effects instantly. The voice groups are selected independently for the upper and lower keyboards.

❸ UPPER TAB
These voices are selected for the upper keyboard by turning on the **TAB** button of the **UPPER ORCHESTRAL CONDUCTOR**. Included are the flute and percussive sounds, plus tremolo and celeste effects. A **TAB CANCEL** button allows you to turn off all the **TAB** voices immediately.

❹ LOWER TAB
Select these voices for the lower keyboard by turning on the **TAB** button of the **LOWER ORCHESTRAL CONDUCTOR**. Like the **UPPER TAB** buttons, the voices can be combined or selected individually.

❺ UPPER POLY
Turning on the **POLY** button of the **UPPER ORCHESTRAL CONDUCTOR** will select these sounds for the upper keyboard. They include the sounds of orchestral and percussive instruments.

❻ LOWER POLY
Select these voices for the lower keyboard by turning on the **POLY** button of the **LOWER ORCHESTRAL CONDUCTOR**. As with other lower keyboard voices, they are used mostly for accompaniment.

❼ U&L SPECIAL
These voices can be selected for either the upper or lower keyboard by turning on the **SPECIAL** button in the **UPPER** or **LOWER ORCHESTRAL CONDUCTOR**. They comprise both orchestral and percussive instruments.

❽ U&L SOLO
Select these monophonic sounds for either the upper or lower keyboard by turning on the **SOLO** button in the **UPPER** or **LOWER ORCHESTRAL CONDUCTOR**. Select only **SOLO** for a keyboard, or combine with other voices using the **ORCHESTRAL CONDUCTOR**.

⑨ UPPER ORGAN
These voices are selected for the upper keyboard when the **ORGAN** button of the **UPPER ORCHESTRAL CONDUCTOR** is on. Five preset organ voices are always available, and in addition, four more preset sounds can be selected from the **MUSICAL DIRECTOR** and stored for instant recall.

⑩ LOWER ORGAN
Select these voices for the lower keyboard by turning on the **ORGAN** button of the **LOWER ORCHESTRAL CONDUCTOR**. Four preset organ voices are always available. An additional preset sound can be selected from the **MUSICAL DIRECTOR** and stored for quick recall.

⑪ UPPER STRING/VOCAL ENSEMBLE
These voices are selected for the upper keyboard with the **STRING ENSEMBLE** or **VOCAL ENSEMBLE** button of the **UPPER ORCHESTRAL CONDUCTOR**. As the names imply, these buttons allow you to create the effects of an orchestral string or choral section.

⑫ LOWER STRING/VOCAL ENSEMBLE
Select these voices for the lower keyboard with the **STRING ENSEMBLE** or **VOCAL ENSEMBLE** button of the **LOWER ORCHESTRAL CONDUCTOR**.

⑬ BASS
These are the voices for the pedal keyboard. As with other sound groups, the volume of the pedal voices is adjusted with the separate **VOLUME** buttons.

⑭ Full Bass Pedal/BASS SOLO
While the full bass pedal is pressed, the lowest note played on the lower keyboard is selected and played as the bass note; but the voices and effects are those selected by the **BASS** voice section. If the full bass pedal is pressed with the **BASS SOLO** button on, only the bass solo is heard when you play the lower keyboard.

⑮ TRANSPOSE
C is the standard setting, but you can raise or lower the key of the entire organ with the two buttons. The transposed key is shown on the **MUSICAL DISPLAY**.

⑯ TECHNI-CHORD
Chord notes played on the lower keyboard are added to melody notes played on the upper keyboard. Choose from four harmonic styles.

⑰ SUSTAIN/Knee Lever
Sustain can be applied to the upper, lower and/or pedal keyboard to allow the sound to fade away gradually. Adjust the length of the sustain with the **SUSTAIN** buttons. Turn the sustain on and off quickly with the knee lever.

⑱ DIGITAL REVERB
Apply a reverberation effect to the organ sound, and select from three levels of echo depth.

⑲ Expression Pedal
Increase and decrease the loudness of all the organ voices as you play to add expression to the music.

⑳ Glide Control
Lower the pitch or the organ by one half-tone by pressing this control. This is used, for example, for the Hawaiian guitar effect and can be applied to many of the upper and lower keyboard voices.

㉑ FOOT SW for GLIDE/RHYTHM
The glide control can be used instead to conveniently turn the rhythm on and off by turning this button on.

㉒ VOICE SETTING COMPUTER
Set up the voices and effects for the upper, lower and pedal keyboards, and then store them in these 7 buttons for instant recall as you play.

㉓ BACK GROUND SOUND
Five unique background sounds add special life and interest to your performance. The volume is adjusted with the **BGS** buttons in the **BALANCE** section.

㉔ Rhythm
Select a preset rhythm from the **MUSICAL DIRECTOR**; turn the rhythm on/off with the **START/STOP** button or **SYNCHRO & BREAK** button; adjust the volume with the **DRUMS** buttons (**BALANCE**); set the tempo—a complete rhythm section.

㉕ FILL IN & INTRO
Add a drum introduction or a fill-in (break) at the touch of a button during your performance.

㉖ ENDING
When this button is pressed, an ending rhythm pattern will be played and then the rhythm will stop.

㉗ TEMPO SET
Store two of your favorite tempos in the buttons for instant recall while playing.

㉘ KEYBOARD PERCUSSION
Turning this button on transforms your lower keyboard into a whole band of percussive instruments and special sounds. The keys are picture-coded for quick and easy selection.

㉙ ACCOMPANY
This feature is used with the automatic rhythms and provides chords that are perfectly synchronized with the selected rhythm. Use the **ACCOMPANY** buttons (**BALANCE**) to adjust the volume.

㉚ PLAY MODE
Select the type of accompaniment—either normal or automatic—or choose the accompaniment you programmed beforehand in the **PROGRAM CHORD COMPUTER**.

㉛ Auto Play Chord
This feature is selected when the **FINGERED** button in the **PLAY MODE** is turned on. When a single key on the lower keyboard is pressed, a full chord and a bass note sound. Play major, minor, seventh or minor seventh chords and the bass note just by pressing one key.

㉜ ONE TOUCH PLAY
With this special **MUSICAL DIRECTOR** feature, you select a rhythm or type of music, and appropriate voices and effects are automatically set.

㉝ RECORD
This button is used to store the contents of the organ's various memories, including the **PLAY SEQUENCER**, **FULLBAND SETTING COMPUTER**, **COMPOSER**, **RHYTHM SEQUENCER** and **PROGRAM CHORD COMPUTER**, or to store your performance with the Digital Disk Recorder. It is also used when setting the functions of the programmable switches.

㉞ PROGRAM CHORD COMPUTER
Use this feature to store the chord accompaniment of an entire song in the organ, then have it played back automatically while you play the melody. With the keys at the right end of your lower keyboard, store whole, half- or quarter-measure chords, specify repeat play, and more.

㉟ COMPOSER
Three methods are available for you to create your own rhythm patterns using the lower keyboard **KEYBOARD PERCUSSION** sounds and the upper keyboard programming keys. Then recall the rhythms at the touch of a button while you play.

㊱ RHYTHM SEQUENCER
Store the rhythms for an entire tune, either preset rhythms from the **MUSICAL DIRECTOR** or ones you create yourself. Merely press the **RHYTHM SEQUENCER** button to have the entire rhythm sequence played back automatically.

㊲ Program Function Switches
The knee lever, left foot switch, right foot switch and full bass pedal can be programmed to conveniently turn on and off other functions, for example the rhythm start/stop or **TECHNI-CHORD**.

㊳ MUSICAL DIRECTOR
This multi-function matrix allows you to select a preset rhythm; use the **ONE TOUCH PLAY** feature; choose voice, rhythm and chord variations; adjust the tuning; set MIDI functions; and much more.

㊴ PLAY SEQUENCER
Use this feature to separately play and store the parts—bass, upper keyboard, lower keyboard and solo voices—of an entire tune. Then have the whole synchronized sequence played back automatically.

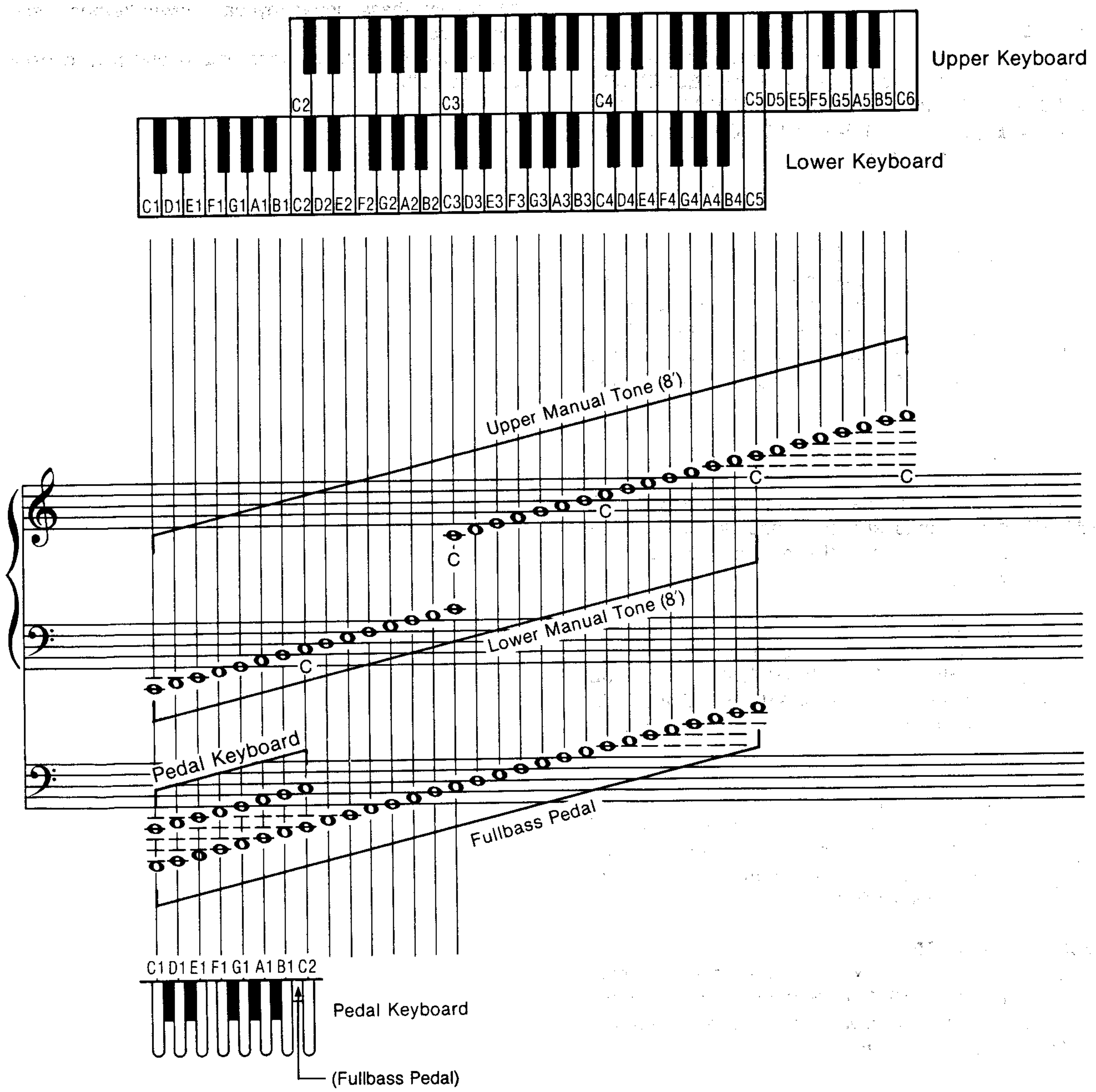
㊵ FULLBAND SETTING COMPUTER/FSC
The voices, effects, chords and rhythms for four songs can be stored for quick recall. Or the voices, etc., for one song including the contents of the **PLAY SEQUENCER** can be stored.

㊶ DIGITAL DISK RECORDER (U.S.A. version only)
The Digital Disk Recorder allows virtual unlimited storage and playback of your organ performances. Several tunes or one very long tune can be stored on each digital memory disk. Play and store the parts separately—bass, upper keyboard, lower keyboard and solo voices.
The sequence is then synchronized and played back automatically.

KEYBOARD RANGES

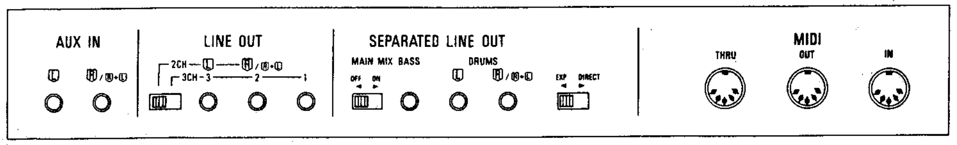
Upper Keyboard.............49 Keys (4 Octaves)
Lower Keyboard.............49 Keys (4 Octaves)
Pedal Keyboard...............13 Keys (1 Octave)+Fullbass Pedal

* An 8-foot compass is used for each keyboard.


Upper Keyboard
C2 C3 C4 C5 D5 E5 F5 G5 A5 B5 C6
Lower Keyboard
C1 D1 E1 F1 G1 A1 B1 C2 D2 E2 F2 G2 A2 B2 C3 D3 E3 F3 G3 A3 B3 C4 D4 E4 F4 G4 A4 B4 C5
Upper Manual Tone (8')
Lower Manual Tone (8')
Pedal Keyboard
Fullbass Pedal
C
C1 D1 E1 F1 G1 A1 B1 C2
Pedal Keyboard
(Fullbass Pedal)

CONNECTION TERMINALS

(On the rear panel)


AUX IN
LINE OUT
SEPARATED LINE OUT
MAIN MIX
BASS
DRUMS
EXP
DIRECT
MIDI
THRU
OUT
IN

■ **AUX IN** (input level 500mV, 30kΩ)

Use these inputs to connect the audio outputs of other audio equipment, such as a tape deck, VCR, tuner, or an audio mixer, for playback through the organ. If connecting a monaural line, connect it to the **R/R+L** terminal.

■ **LINE OUT** (output level 300mV, 600Ω)

Use these outputs to connect the audio output of the organ to other audio equipment, such as a tape deck, VCR, audio mixer, tone cabinets, or additional amplifier/speaker systems.
When the **MAIN MIX** switch is set to OFF, the **BASS** and **DRUMS** sections are disconnected from the **LINE OUT** terminals on the front and rear panel.

■ **SEPARATED LINE OUT**
(output level 500mV, 600Ω)

Use these outputs to connect the audio outputs of the **BASS** and **DRUMS** sections only to other audio equipment. When the **MAIN MIX** switch is set to OFF, the **BASS** and **DRUMS** sections are disconnected from the **LINE OUT** terminals.

When not using the **SEPARATED LINE OUT** terminals, be sure the **MAIN MIX** selector is set to **ON.**

When the **EXP/DIRECT** selectors is set to **EXP**, the outputs from the **BASS** and **DRUMS** terminals respond to expression pedal changes; when set to **DIRECT**, these outputs do not change in response to changes in the expression pedal.

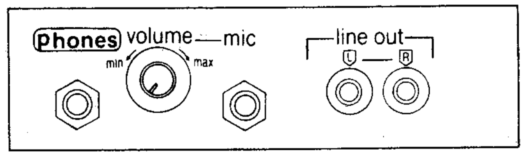
■ **MIDI (Musical Instrument Digital Interface)**

MIDI is standard specification that enables connection to equipment such as synthesizers and personal computers. Data transmission and reception are possible between the Technics organ and equipment provided with MIDI terminals.

IN:	The terminal that receives data from external equipment.
OUT:	The terminal that transmits data from the organ to external equipment.
THRU:	The terminal that transfers data from the **IN** terminal directly to other equipment.

- Use a 5-pin DIN cord (less than 15m long) for these connections.
- When this organ is connected to other equipment in a loop (**IN → OUT, OUT → IN** connection), the organ may not operate properly. In this case, eliminate one of the connections.
- This organ can transmit or receive data for **UPPER, LOWER, BASS** and **SOLO** parts.

(Below the lower keyboard)


Phones
volume
mic
min
max
line out
L
R

PHONES (Use headphones with 16 ohm impedance.)
For silent practice headphones may be used. When plugged in, the organ's speaker system is automatically switched off, and the entire organ is heard only through the headphones.

MIC (input level 7.5mV, 10kΩ)
The organ will accept a microphone of the uni-directional type. This type of microphone reduces feedback to the minimum.

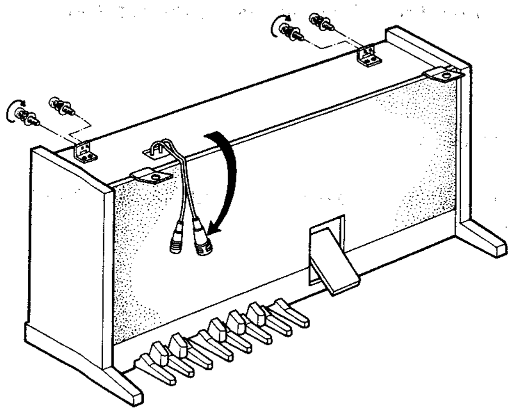
MIC VOLUME balances instrumental or vocal sounds fed into the microphone with the loudness of the organ.

LINE OUT (output level 300mV, 600Ω)
Phono jacks are provided for 2-channel (L/R) output. Use these outputs to connect the audio output of the organ to other audio equipment, such as a tape deck, VCR, audio mixer, tone cabinets, or additional amplifier/speaker systems.

When the **MAIN MIX** switch is set to OFF, the **BASS** and **DRUMS** sections are disconnected from the **LINE OUT** terminals on the front and rear panel.

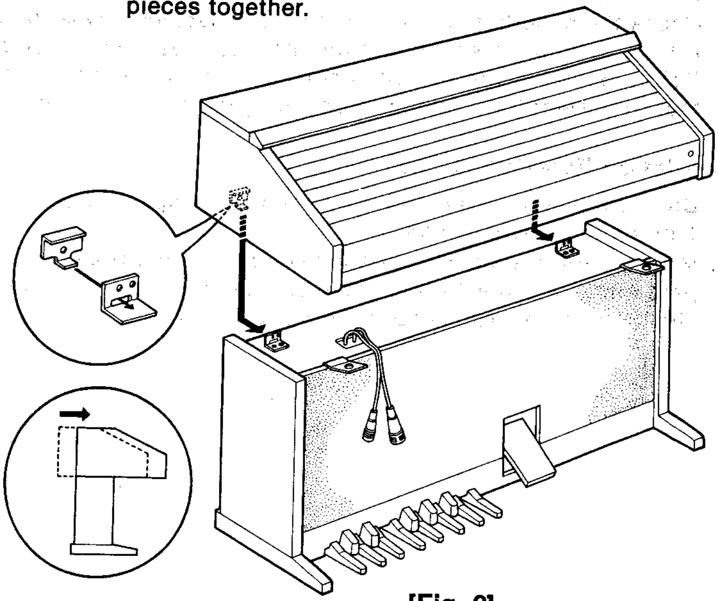
HOW TO ASSEMBLE THE ORGAN

1 On the lower stand part, remove the four bolts from the metal joints.
Lay the cords to the front of the stand.



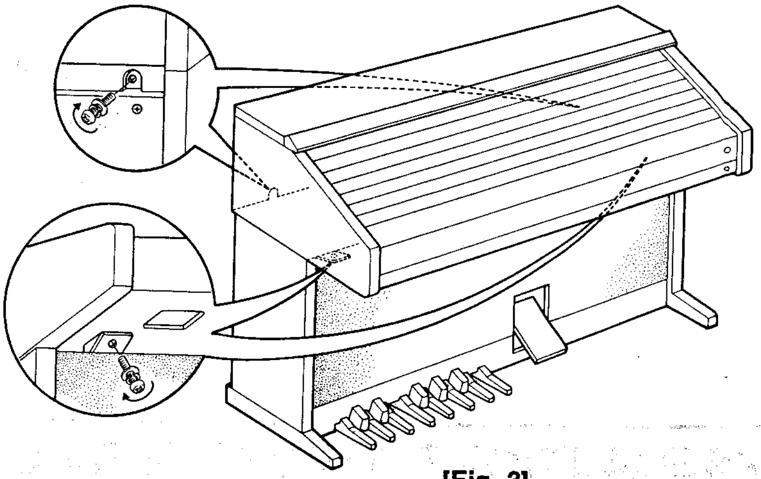
[Fig. 1]

2 Place the upper organ part on the lower stand part, making sure to fit the metal pieces together.



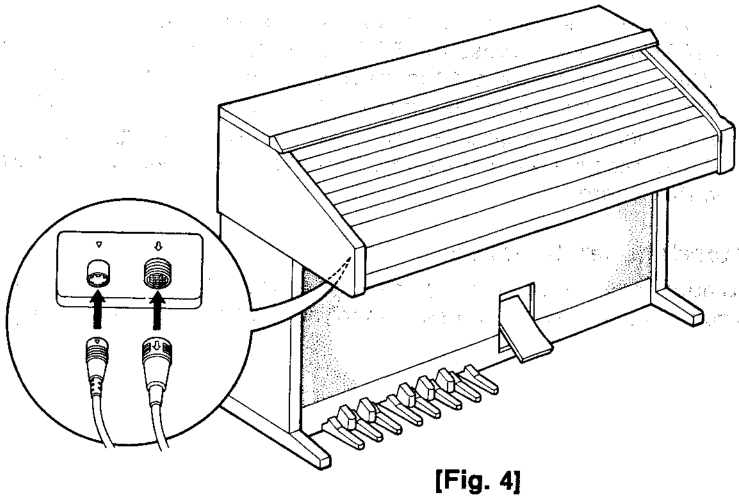
[Fig. 2]

3 Using the four bolts removed in step 1, secure the upper organ part to the lower organ part as shown in the figure.



[Fig. 3]

4 Connect the two cords from the lower stand part to the respective terminals on the underside of the upper organ part. Unlock the cover with the accessory key.



[Fig. 4]

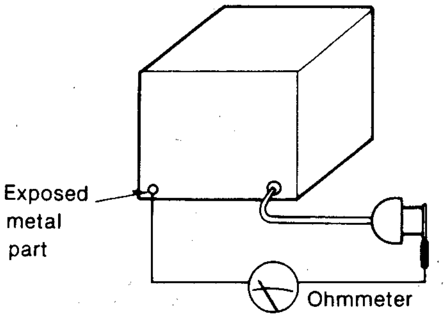
SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

- **Safety Precaution**

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

- **Insulation Resistance Test**

1. Unpulg the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screw heads, connectors, control shafts, handle brackets, etc..
   Mesurements should range from 3MΩ to infinity to all exposed parts.



[Fig. 5]

Resistance=3MΩ to ∞

PRECAUTIONS BEFORE SERVICING

■ Precautions for measuring of the output waveforms.

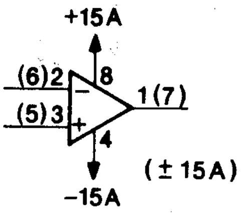
1. Please set the INITIAL mode before measurement.
   - INITIAL mode: Press the FSC button to turn it on, and then press the INITIAL key on the upper keyboard.
2. After INITIAL mode, set the measurement conditions as each check points.
3. The waveform was measured by "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may somewhat change due to variation of timing of measure.
4. The voltage shown in the photo is 1/10 of the actual value. However, the actual voltage is 10 times of as shown in this photo.

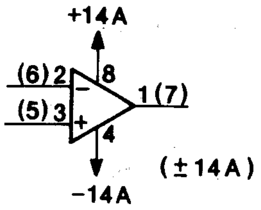
■ Important safety notice:

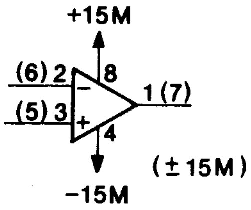
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

■ Power supply of OP Amp IC

1. Power supply of **EJ** circuit is using three different type of voltage supply. Voltage supply to each OP Amp IC as shown the figure.







- (±15A): ±15V D.C. supply for analog circuit.
- (±14A): ±14V D.C. supply for modulation circuit.
- (±15M): ±15V D.C. muting power supply for noise suppression.

2. Other circuit of power supply (except **EJ** circuit) is only using ±15V (A).

■ Symbolic Marks

The symbolic marks for resistors and capacitors, which are used in the circuits for this organ, are as shown in TABLE-1 and TABLE-2.

1. RESISTORS
   - Resistors without symbolic mark are FIXED CARBON FILM RESISTORS (ERD-type).
   - All resistors are 1/4WATT, ±5% TOLERANCE unless otherwise designated in the schematic diagrams.

(TABLE-1)

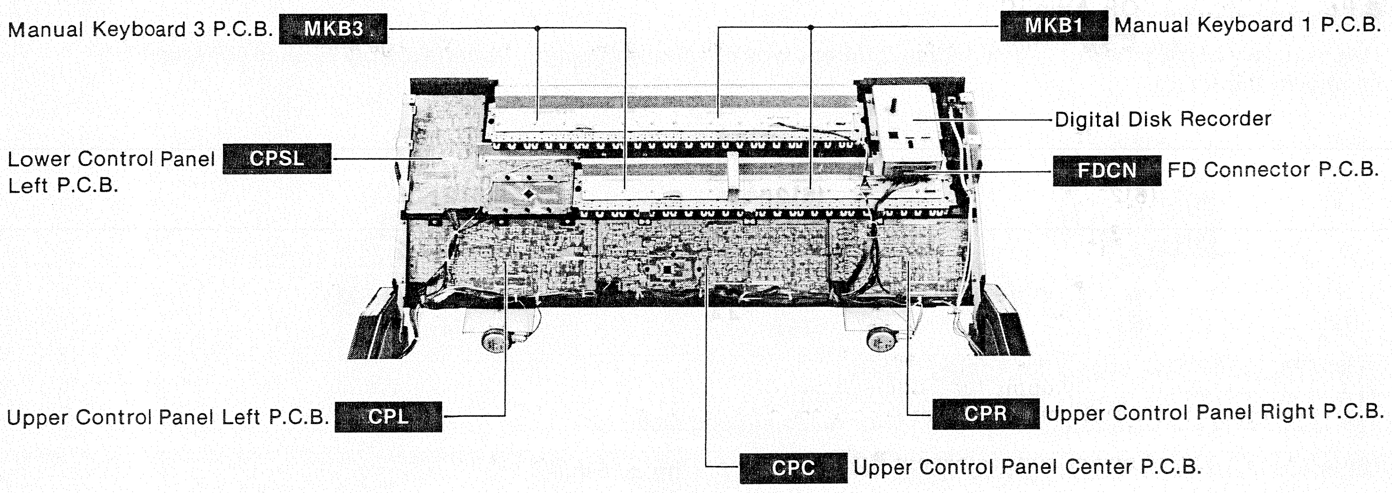
SYMBOL	SPECIFICATION	SYMBOL	SPECIFICATION
Ⓕ	Fixed Carbon Film Resistors "FLAME-PROOF" (ERD—F—type)	Ⓕ	Fixed Metal Film Resistors "FLAME-PROOF" (ERX—type)
Ⓕ	Fixed Wire Wound Resistors "FLAME-PROOF" (ERF—type)	🄵	Fuse Type Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERQ—type)
Ⓕ	Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERG—type)	🄵	Fuse Type Fixed Carbon Film Resistors "FLAME-PROOF" (ERD2FC—type)
	Fixed Metal Film Resistors (Precision and High Stability) (ERO—type)		

2. CAPACITORS
   - Capacitors without symbolic mark are POLYESTER CAPACITORS. (ECQM-type, ECQG-type, ±10% Tolerance)
   - Polarized capacitors without symbolic mark are Aluminum Electrolytic Capacitors. (ECEA—type, ±20% Tolerance)

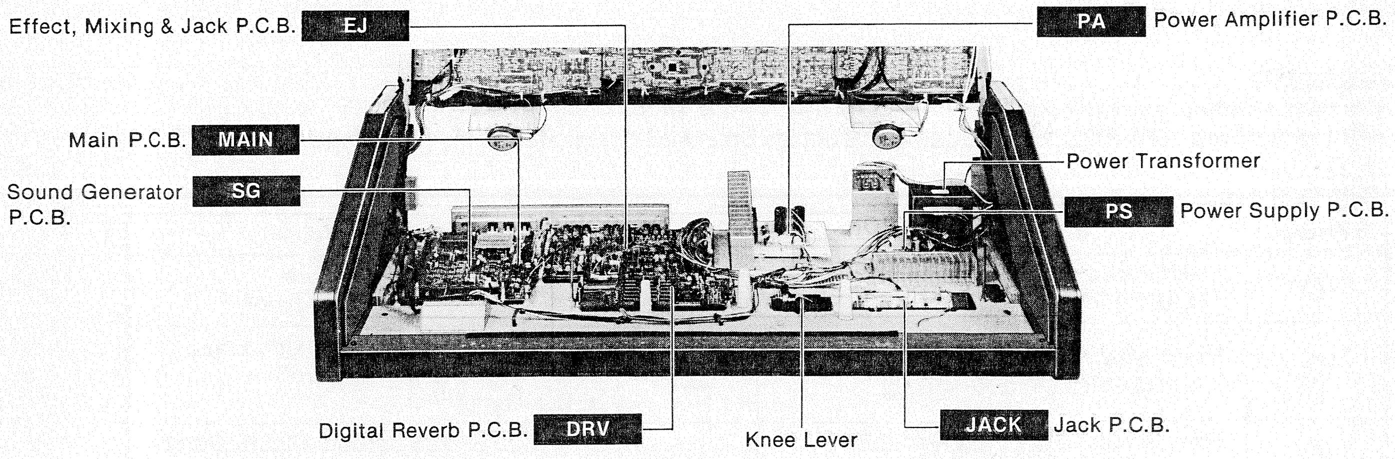
(TABLE-2)

SYMBOL	SPECIFICATION	TYPE
Ⓝ	Non-Polarised Electrolytic Capacitors	ECEA—N—type
Ⓨ	Non-Polarised Electrolytic (for Network System)	ECEA—Y—type
Ⓚ	Aluminum Electrolytic Capacitors (Miniature type)	ECEA—K—type ECEA—X—type
(MS)	Aluminum Electrolytic Capacitors (Low leakage current type)	ECEA—M—type
Ⓩ	Aluminum Electrolytic Capacitors (Low impeadance type)	ECEA—Z—type
(TF)	Metalized Plastic Film Capacitors (TF Series)	ECQV—type
(TF)	Polyester Film Capacitors	ECQB—type
○	Temprature Compensating Ceramic Capacitors	ECC—type
○	High-Dielectric Constant Ceramic Capacitors	ECK—type
	Metalized Polyester Film Capacitors for Across the Line	ECQ—EW—type
	Aluminum Electrolytic Capacitors for smooting Circuit	ECES—type

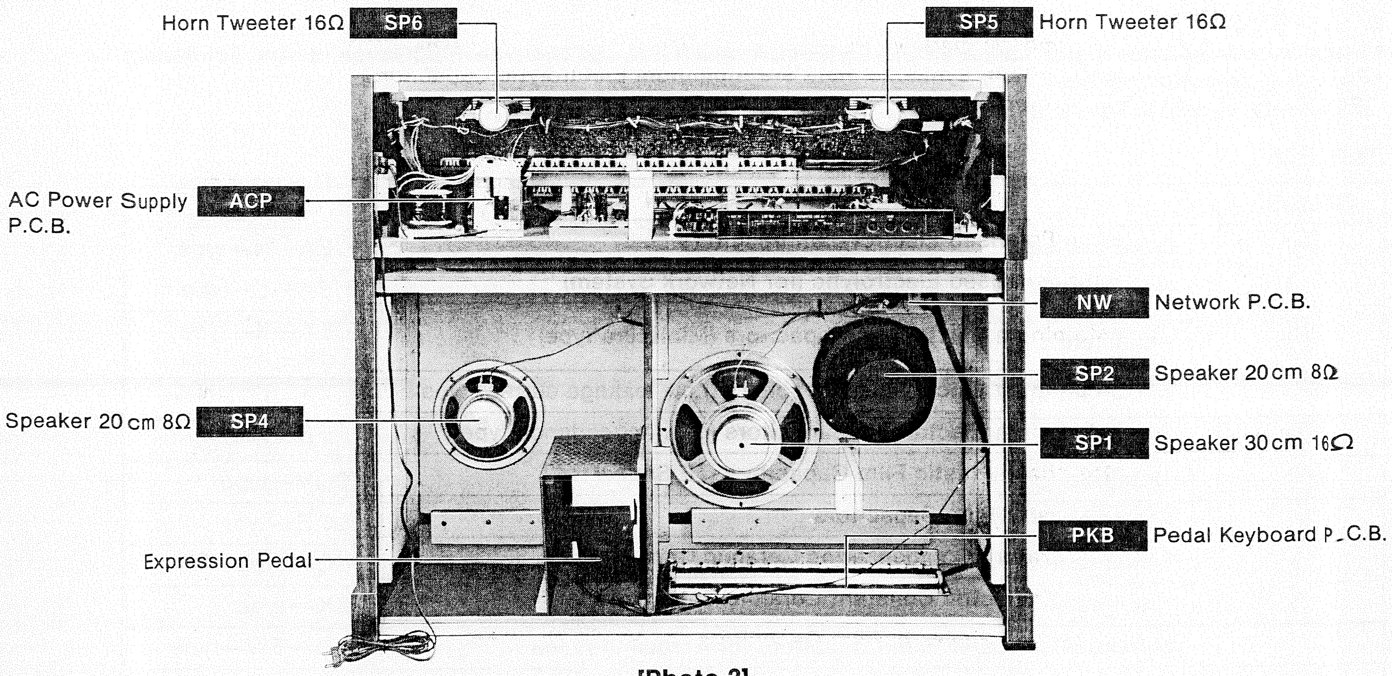
PARTS LOCATION


Manual Keyboard 3 P.C.B. MKB3
MKB1 Manual Keyboard 1 P.C.B.
Digital Disk Recorder
Lower Control Panel Left P.C.B. CPSL
FDCN FD Connector P.C.B.
Upper Control Panel Left P.C.B. CPL
CPR Upper Control Panel Right P.C.B.
CPC Upper Control Panel Center P.C.B.

[Photo-1]


Effect, Mixing & Jack P.C.B. EJ
PA Power Amplifier P.C.B.
Main P.C.B. MAIN
Sound Generator P.C.B. SG
Power Transformer
PS Power Supply P.C.B.
Digital Reverb P.C.B. DRV
Knee Lever
JACK Jack P.C.B.

[Photo-2]

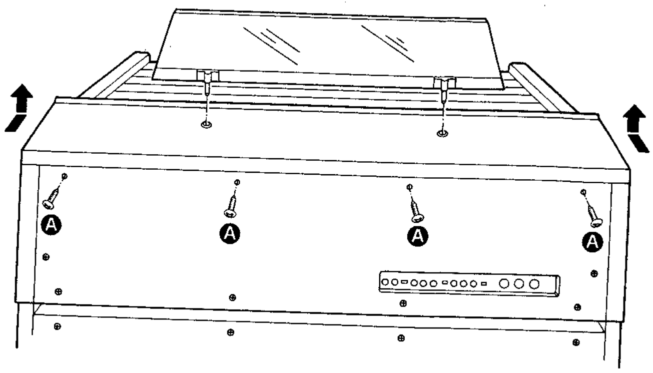

Horn Tweeter 16Ω SP6
SP5 Horn Tweeter 16Ω
AC Power Supply P.C.B. ACP
NW Network P.C.B.
SP2 Speaker 20cm 8Ω
Speaker 20cm 8Ω SP4
SP1 Speaker 30cm 16Ω
PKB Pedal Keyboard P.C.B.
Expression Pedal

[Photo-3]

DISASSEMBLY INSTRUCTIONS

1. Top Cover

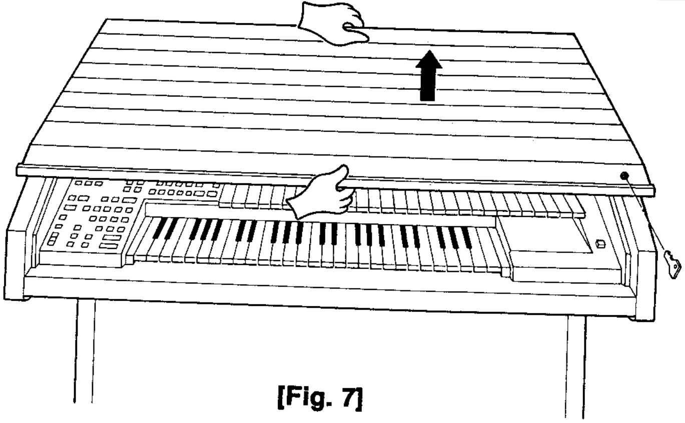
a) Remove the 4 screws Ⓐ located on the rear board.
b) Remove the top cover, slide it forward and lift.



[Fig. 6]

2. Sliding Cover

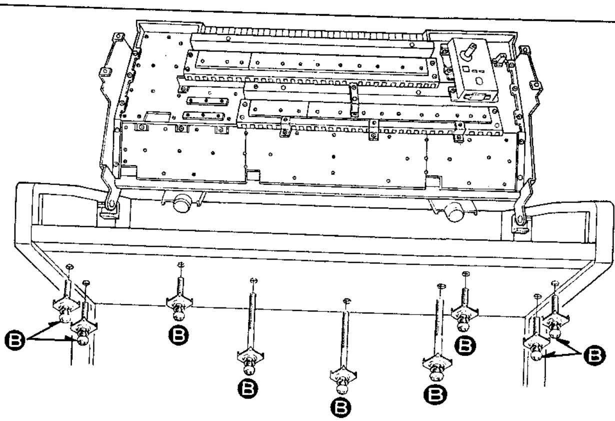
a) Remove the top cover according to step 1.
b) Unlock the sliding cover with the accessory key.
c) Remove the sliding cover in its fully closed position.



[Fig. 7]

3. Control Panel with Keyboard Unit

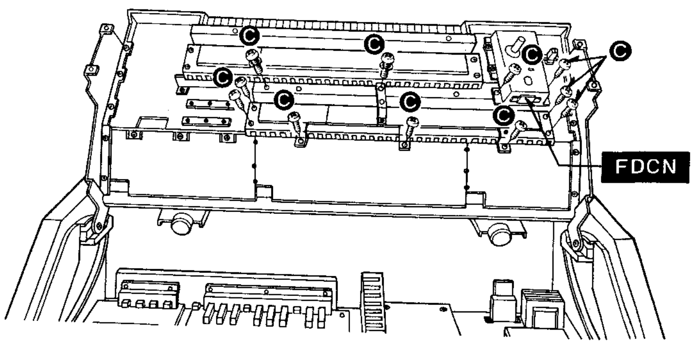
a) Remove both top cover and sliding cover according to steps 1 and 2.
b) Remove the 9 screws Ⓑ on the bottom of the shelf-board.
c) Then the control panel with keyboard unit can be opened upwards.



[Fig. 8]

4. Upper Keyboard

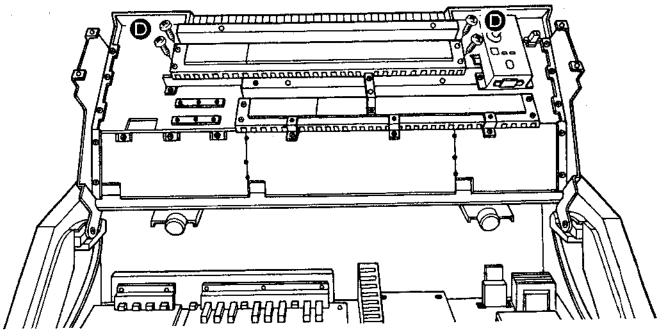
a) Open the control panel with keyboard unit according to step 3.
b) Remove the 11 screws Ⓒ which fasten the upper keyboard chassis.
c) Pull out the connectors from the manual keyboard P.C.B. and FD connector P.C.B.
d) Then the upper keyboard can be removed.



[Fig. 9]

5. Lower Keyboard

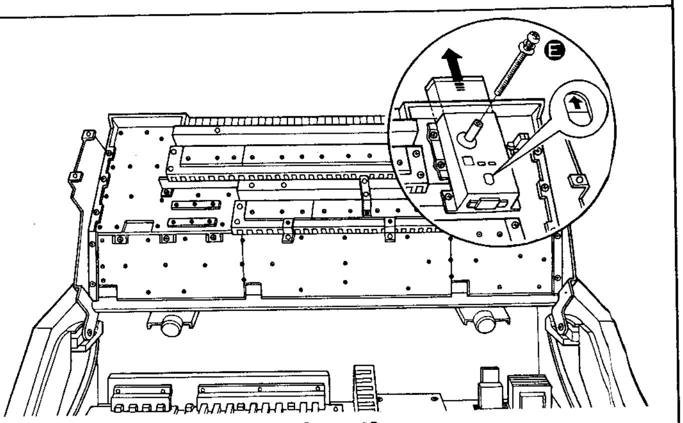
a) Open the control panel with keyboard unit according to step 3.
b) Remove the 4 screws Ⓓ which fasten the lower keyboard chassis.
c) Then the lower keyboard can be removed.



[Fig. 10]

6. Digital Disk Recorder

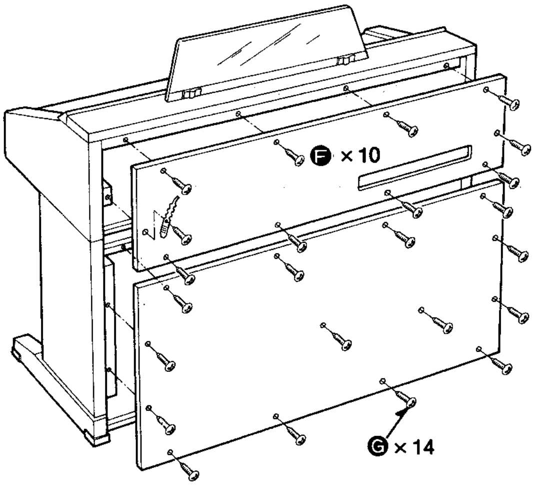
a) Open the control panel with keyboard unit according to step 3.
b) Remove the screw Ⓔ which fasten the digital disk recorder.
c) Pushing the digital disk recorder from the window of the DDR chassis.
d) Then the digital disk recorder can be removed from the front panel.



[Fig. 11]

7. Rear Board

a) Upper cabinet section
Remove the 10 screws Ⓕ on the rear board.
b) Lower cabinet section
Remove the 14 screws Ⓖ on the rear board.
Then the rear board can be removed.



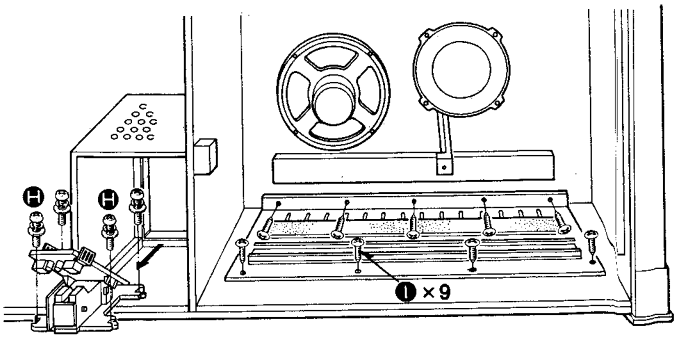
[Fig. 12]

8. Expression Pedal Unit

a) Remove the rear board of the lower cabinet.
b) Remove the 4 screws Ⓗ which fasten the expression pedal unit.
c) The expression pedal unit can be removed.

9. Pedal Keyboard

a) Remove the rear board of the lower cabinet.
b) Remove the 9 screws Ⓘ which fasten the pedal keyboard chassis.
c) Incline the cabinet toward the rear side, and remove the pedal keyboard from the bottom plate of the cabinet.



[Fig. 13]

MEASUREMENTS AND ADJUSTMENTS

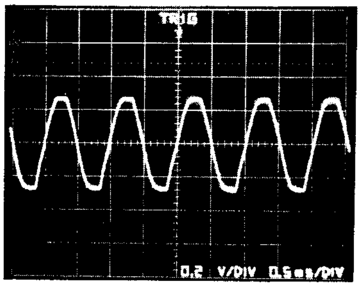
■ Measuring Equipment

- Oscilloscope 20MHz, 10 : 1 probe
- Oscillator, 1kHz sine wave, 0~10Vp-p, 600Ω
- Capacitor, 50V 1μF (ECEA1HN010S)

ADJUSTMENT	MEASURING CONDITIONS	EQUIPMENT	ADJUSTMENT P.C.B.	ADJ. POINT	CONNECT METER TO	METER READING
BBD bias (Tremolo)	any position	Oscilloscope and oscillator	EJ P.C.B.	VR3	Check point ㉗	Photo-A
	1. Connect the oscilloscope to check point ㉗ of EJ circuit board. 2. Input 1kHz sine wave to IC52-③ pin by oscillator through capacitor of less than 50V 1μF. Then, adjust the output level of oscillator until the sinewave on the oscilloscope is clipped. 3. Adjust VR3 so that the output waveforms on the oscilloscope are evenly clipped at top and bottom.					
BBD bias (Celeste)	any position	Oscilloscope and Oscillator	EJ P.C.B.	VR2	IC40-① pin	Photo-A
	1. Connect the oscilloscope to IC40-① pin of EJ circuit board. 2. Input 1kHz sine wave to IC34-③ pin by oscillator through capacitor of less than 50V 1μF. Then, adjust the output level of oscillator until the sinewave on the oscilloscope is clipped. 3. Adjust VR2 so that the output waveforms on the oscilloscope are evenly clipped at top and bottom.					

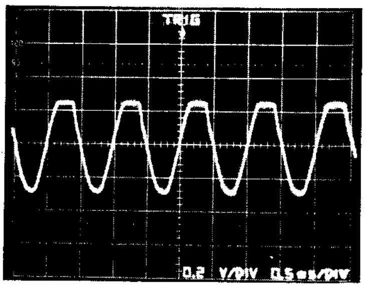
BBD bias adjustment

○: Good



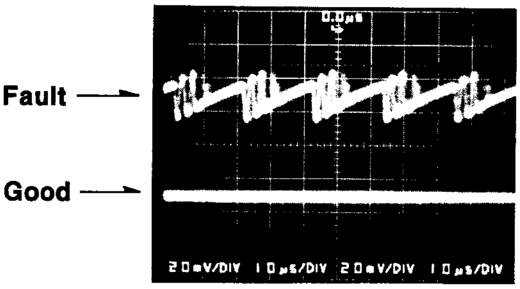
[Photo-A]

× : Fault



[Photo-B]

DRV bias	any position	Oscilloscope	DRV P.C.B.	VR2	Check point ❷	Photo-C
	1. Connect the oscilloscope to check point ❷ of DRV circuit board. 2. Adjust VR2 so that the output level on the oscilloscope are minimum level as shown in Photo-C.					

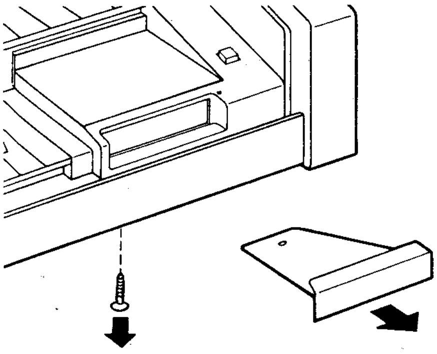


[Photo-C]

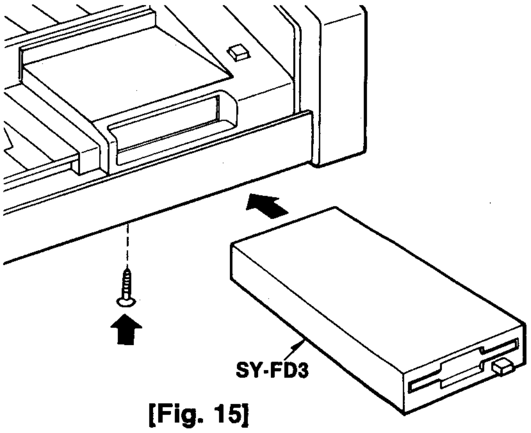
HOW TO INSTALL THE DIGITAL DISK RECODER

- **The SY-FD3 Digital Disk Recoder is an option (Except U.S.A. version).**
  When using the optional Digital Disk Recoder (SY-FD3), installing in the Technics organ as istructed below.

1. Make sure that the Technics organ is turned off.
2. Remove the screw from under the right side of the keyboard. The cover can now be removed from the Digital Disk Recorder compartment.
3. Insert the Digital Disk Recorder into the compartment opening and push it in firmly as far as it will go. Secure the Digital Disk Recorder with the screw that you removed in step **2**.



[Fig. 14]



[Fig. 15]

SYMPTOMS WHICH APPEAR TO BE SIGNS OF TROUBLE

The following changes in performance may occur in the Technics organ but do not indicate trouble:

Phenomenon	Remedy
A rhythm does not start or no rhythm sounds.	•No rhythm sounds if the **DRUMS BALANCE** buttons are off. •If the **PCC** button has no stored chords, no rhythm will start when turned on. •If the selected **COMPOSER** button has no stored rhythm patterns, no rhythm will sound. Select a **COMPOSER** button with a stored rhythm.
Rhythm **TEMPO/PROGRAM** control is inoperative.	When the **TEMPO SET** button is turned on: •The **TEMPO/PROGRAM** control does not operate if the **FINE** button is turned off. •If the **FINE** button is turned on, fine adjustment is possible with the **TEMPO/PROGRAM** control. Press **TEMPO SET** buttons **1** and **2** simultaneously to turn them off. This allows the rhythm tempo to be adjusted with the **TEMPO/PROGRAM** control.
The knee lever, foot switch(es) and full bass pedal (GX5/GX7) do not operate properly. For example, the knee lever does not turn the sustain function on and off.	Any functional on and off operation other than the factory presets are storable in these switches. For example, the knee lever can turn the **TECHNI-CHORD** on and off. Store your favorite functions to turn them on and off.
The **FAST TREMOLO** speed is improper.	The **FAST TREMOLO** speed is preadjustable. Adjust to your favorite speed. (Musical Director, MIDI & CONTROL Mode.)
The contents of the **PROGRAM CHORD COMPUTER**, **COMPOSER**, etc. cannot be stored.	After pressing the **RECORD** button, press the necessary buttons within 5 seconds. The **RECORD** button turns off after a lapse of 5 seconds, making storage operation impossible. Press the **RECORD** button again.

Phenomenon	Remedy
Storage is not possible with the **PROGRAM CHORD COMPUTER**.	•Check that the **PCC** indicator is slowly flashing. Pressing the **FINGERED** button turns off the **RECORD** button, making storage operation impossible. •Do not release the left hand (chord designation) before pressing the measure keys (├─┤ , ├┼┤ and ├┼┼┤).
When the rhythm stored in the **COMPOSER** is played, the **ACCOMPANY** and automatic bass accompaniment do not sound.	•Store patterns using the **RHYTHMIC** and **MELODIC** keys, just as you would with other rhythmic instrumental effects. •The bass of the Auto Play Chord sounds with a bass drum, which should be stored.
A rhythm pattern cannot be stored in the **COMPOSER** with the real-time mode.	The real-time metronome must be turned on to enable storage of a rhythm in the real-time mode. If the metronome cannot be heard, press the **START/STOP** button to start it.
The Digital Disk Recorder produces a noise during storage or automatic performance.	This occurs when the Digital Disk Recorder searches for a storage location. It does not indicate a problem.
The rhythm and melody do not coincide during automatic performance when using the Digital Disk Recorder.	This occurs when the automatic performance is started before the selected number appears on the **MUSICAL DISPLAY** after the **FSC** button has been pressed and the song has been selected by pressing a white numbered key on the upper keyboard. Be sure to wait for the selected number to appear.
The stored introduction is not reproduced during automatic performance.	•Set the beginning of a song, such as an introduction, before turning on the **RECORD** button. •To add an introduction after the **RECORD** indicator and **PLAY SEQUENCER** indicator flash, set it after turning on the **FSC** button. Then turn off the **FSC** button.
No storage is possible even when the **RECORD** indicator and **PLAY SEQUENCER** indicator are slowly flashing.	•No storage is possible when the **FSC** button is turned on. Turn it off before playing. •If any **PLAY SEQUENCER** indicator is lit, press the **START/STOP** button for automatic performance of the stored part. Another part can then be stored.
The quick rhythm tempo is delayed when the **PLAY SEQUENCER** is used.	This occurs when too many notes are played at one time. Slow down the tempo (to about ♩=250) or reduce the number of notes played at a time.
Different voices and effects are stored in the **FULLBAND SETTING COMPUTER** (**FSC**) or in the Digital Disk Recorder.	If the **VOICE SETTING COMPUTER** function is selected, the stored contents in this button are stored in the **FULLBAND SETTING COMPUTER** or in the Digital Disk Recorder. When the voices and effects selected by the **VOICE SETTING COMPUTER** are changed, store them in the **VOICE SETTING COMPUTER** again before storage in the **FULLBAND SETTING COMPUTER** or in the Digital Disk Recorder.
The cabinet and slide cover become heated to some degree.	The Technics organ has a built-in power source that heats the cabinet and slide cover to some degree. This is not an indication of trouble.
The buttons, keyboards, etc. malfunction.	•Press the **FSC** button first to turn it on and then press the **INITIAL** key on the upper keyboard. •If the buttons, keyboards, etc. do not return to normal, turn the **POWER** switch off once, then turn on again.

ERROR DISPLAY

When using the Digital Disk Recorder or the organ's internal memory (GX3/GX5) and an error (Err) is indicated on the **MUSICAL DISPLAY**, the number following indicates the type of error.

Error No.	Problem	Cause
Nothing appears on the display.	The memory disk format is different (when recording).	The disk used is not a normal mode or professional mode disk. Initialize the disk.
1	The mode change function of the Digital Disk Recorder does not work (when **RECORD** → **FSC** → **INITIAL** is pressed).	•No memory disk is inserted. •The memory disk is write-protected.
2	Data transmission error when loading from or saving on a memory disk.	An error occurred during data transmission with the memory disk. Perform the loading or saving procedure once again.
3	Recording in or playing back from the organ's internal memory is unsuccessful (GX3/GX5).	The memory track number specified is not correct. Specify **1**~**5**.
5	Loading or saving on a memory disk is unsuccessful.	•The memory track number is not correct. In the professional mode, specify **1**; in the normal mode, specify **1**~**20**. •No memory disk is inserted. •The memory disk is write-protected (when recording).

When the memory disk is not correctly inserted, an error will be indicated. Remove the memory disk and insert it correctly.

MIDI Implementation Chart

Technics Organ
[SX-GX3/SX-GX5/SX-GX7]

(Transmitted)

Function...		upper	lower	bass	solo	Remarks
Basic Channel	Default Changed	1~16 1~16	1~16 1~16	1~16 1~16	1~16 1~16	memorized
Mode	Default Messages Altered	3 × ——	3 × ——	3 × ——	3 × ——	
Note Number	True voice	12~127 ——	0~120 ——	0~108 ——	12~127 ——	Including the use of Octave Shift
Velocity	Note ON Note OFF	× × (9nH:V=0)	× × (9nH:V=0)	× × (9nH:V=0)	× × (9nH:V=0)	
After Touch	Key's Ch's	× ×	× ×	× ×	× ×	
Pitch Bender		×	×	×	×	
Control Change	64	*○ ×	*○ ×	×	×	sustain
	93	*○ ×	*○ ×	×	×	chorus (GX5/GX7)
	94	*○ ×	*○ ×	×	×	celeste
Prog Change	True #	*○ (0~11) × *○ (0~15) × *○ (0~17) × ——	*○ (0~9) × *○ (0~15) × *○ (0~17) × ——	*○ (0~7) × *○ (0~9) × *○ (0~11) × ——	*○ (0~7) × *○ (0~11) × *○ (0~13) × ——	(GX3) (GX5) (GX7)
System Exclusive		×				
System Common	Song Pos Song Sel Tune	× *○ (0~19) × ×				
System Real Time	Clock Commands	○ *○ ×				start/stop
Aux Messages	Local ON/OFF All Notes OFF	× ○	× ○	× ○	× ○	
	Active Sense Reset	○ ×				
Notes		*○ ×.......... Whether or not the data for each of these items is transmitted can be set. **Including the use of Full Bass Pedal (GX5/GX7).				

Mode 1: OMNI ON, POLY **Mode 2:** OMNI ON, MONO ○ : Yes
Mode 3: OMNI OFF, POLY **Mode 4:** OMNI OFF, MONO × : No

MIDI Implementation Chart

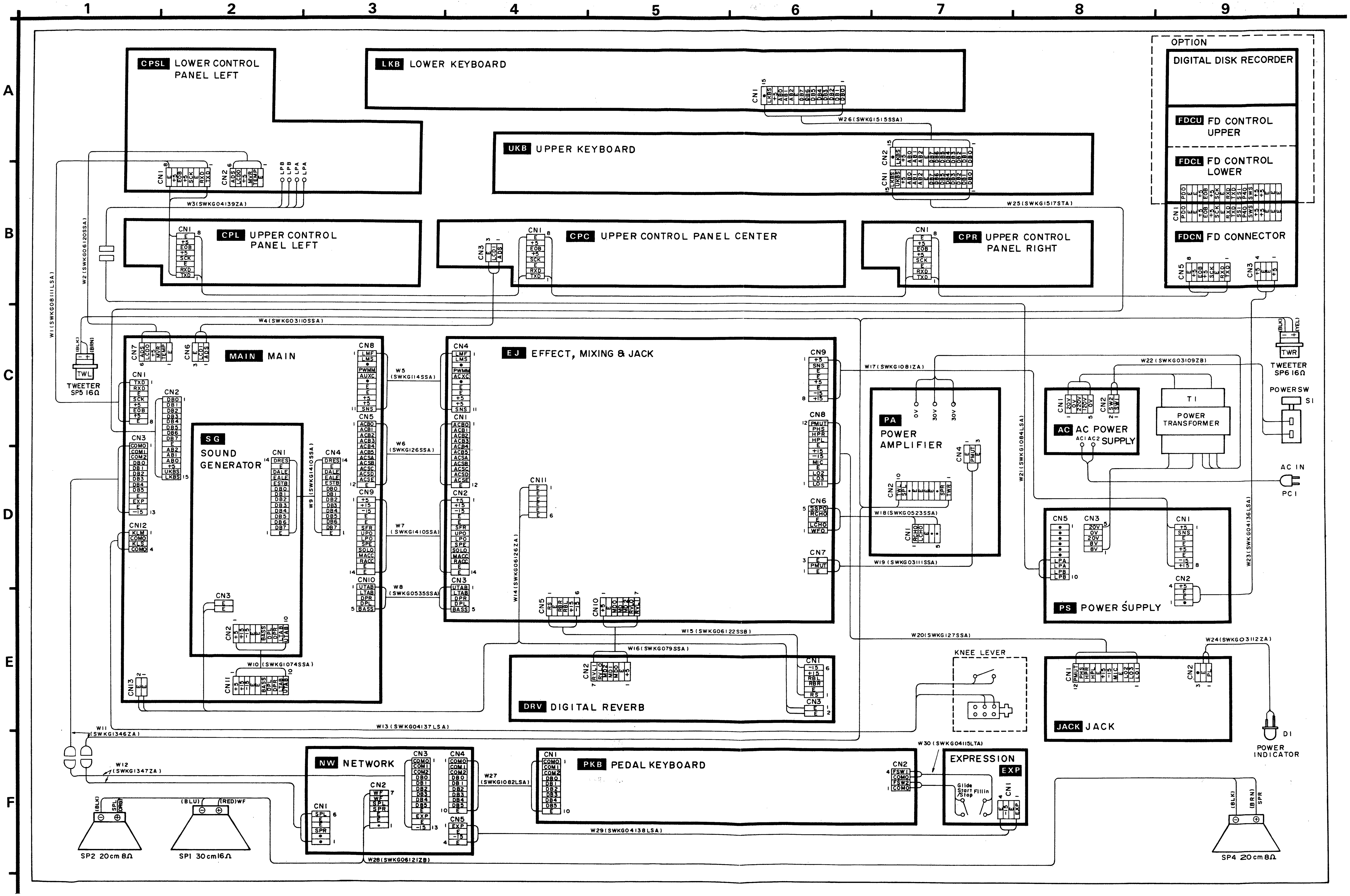
Technics Organ
[SX-GX3/SX-GX5/SX-GX7]

(Recognized)

Function...		upper	lower	bass	solo	Remarks
Basic Channel	Default Changed	1~16 1~16	1~16 1~16	1~16 1~16	1~16 1~16	memorized
Mode	Default Messages Altered	3 × ——	3 × ——	3 × ——	3 × ——	OMNI OFF POLY Mode
Note Number	True voice	0~127 **36~127	0~127 **24~119	0~127 **24~119	0~127 **36~127	Changes depending on the position of the Transpose or Octave Shift.
Velocity	Note ON Note OFF	× × (9nH:V=0)	× × (9nH:V=0)	× × (9nH:V=0)	× × (9nH:V=0)	
After Touch	Key's Ch's	× ×	× ×	× ×	× ×	
Pitch Bender		×	×	×	×	
Control Change	64	*○ ×	*○ ×	×	×	sustain
	93	*○ ×	*○ ×	×	×	chorus (GX5/GX7)
	94	*○ ×	*○ ×	×	×	celeste
Prog Change	True #	*○ (0~7) × *○ (0~7) × *○ (0~7) × 0~7 0~7 0~7	×	*○ (0~7) × *○ (0~9) × *○ (0~11) × 0~7 0~9 0~11	*○ (0~7) × *○ (0~11) × *○ (0~13) × 0~7 0~11 0~13	(GX3) (GX5) (GX7) (GX3) (GX5) (GX7)
System Exclusive		×				
System Common	Song Pos Song Sel Tune	× *○ (0~19) × ×				
System Real Time	Clock Commands	○ *○ ×				
Aux Messages	Local ON/OFF All Notes OFF	× ○	× ○	× ○	× ○	(123~127)
	Active Sense Reset	○ ×				
Notes		*○ ×.......... Whether or not the data for each of these items is received can be set. **Changes depending on the selected voice.				

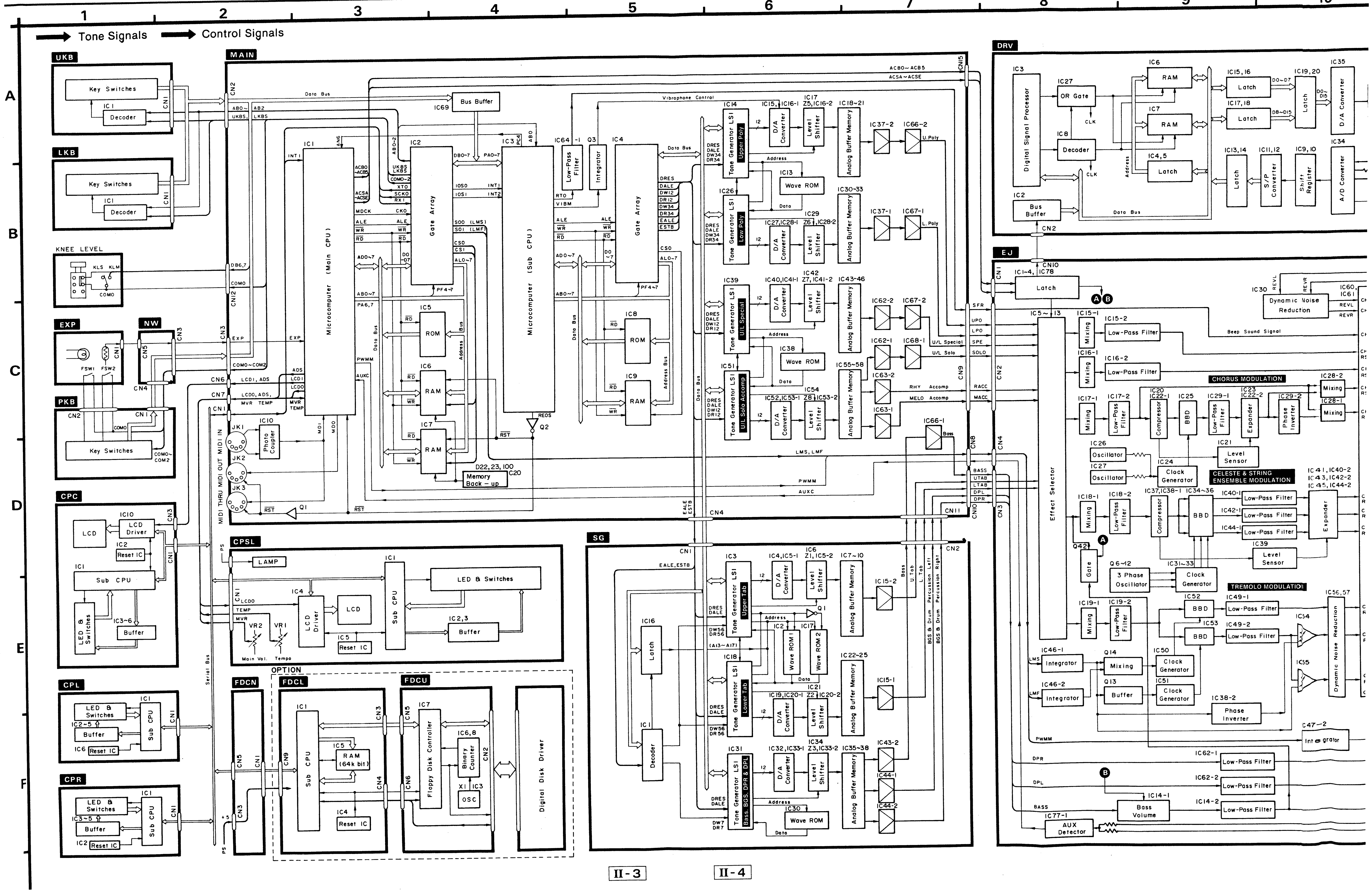
Mode 1: OMNI ON, POLY **Mode 2:** OMNI ON, MONO ○ : Yes
Mode 3: OMNI OFF, POLY **Mode 4:** OMNI OFF, MONO × : No

WIRING CONNECTION DIAGRAM

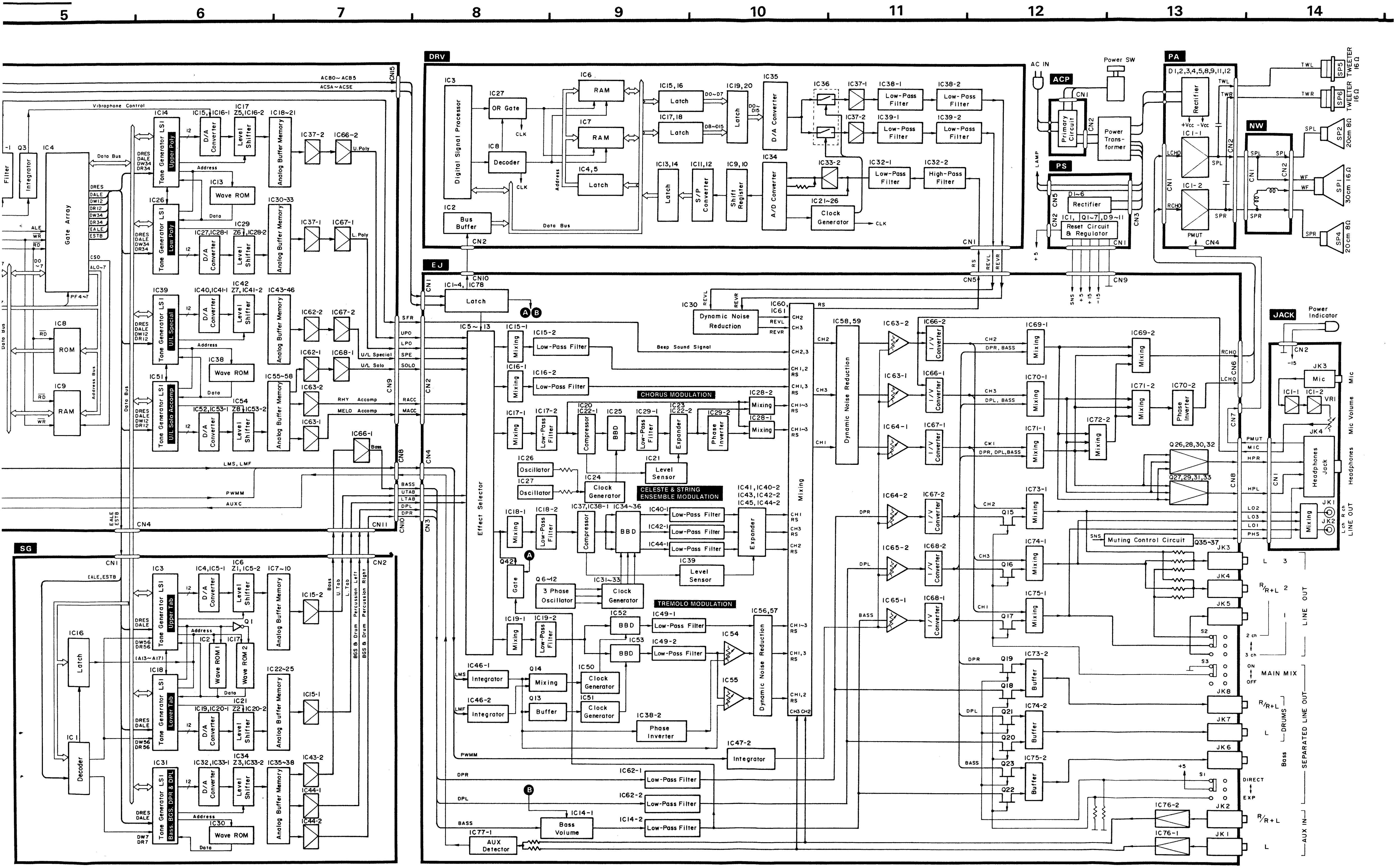


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
CPSL LOWER CONTROL PANEL LEFT
LKB LOWER KEYBOARD
UKB UPPER KEYBOARD
OPTION
DIGITAL DISK RECORDER
FDCU FD CONTROL UPPER
FDCL FD CONTROL LOWER
FDCN FD CONNECTOR
CPL UPPER CONTROL PANEL LEFT
CPC UPPER CONTROL PANEL CENTER
CPR UPPER CONTROL PANEL RIGHT
MAIN MAIN
SG SOUND GENERATOR
EJ EFFECT, MIXING & JACK
PA POWER AMPLIFIER
AC AC POWER SUPPLY
T1 POWER TRANSFORMER
PS POWER SUPPLY
DRV DIGITAL REVERB
JACK JACK
KNEE LEVER
NW NETWORK
PKB PEDAL KEYBOARD
EXPRESSION EXP
TWEETER SP5 16Ω
TWEETER SP6 16Ω
POWER SW S1
AC IN PC1
POWER INDICATOR D1
SP2 20cm 8Ω
SP1 30cm 16Ω
SP4 20cm 8Ω
W2 (SWKG06120SSA)
W3 (SWKG04139ZA)
W4 (SWKG03110SSA)
W5 (SWKG114SSA)
W6 (SWKG126SSA)
W7 (SWKG1410SSA)
W8 (SWKG05355SSA)
W9 (SWKG1410SSA)
W10 (SWKG1074SSA)
W11 (SWKG0811LSA)
W11 (SWKG1346ZA)
W12 (SWKG1347ZA)
W13 (SWKG04137LSA)
W14 (SWKG06126ZA)
W15 (SWKG06122SSB)
W16 (SWKG079SSA)
W17 (SWKG1081ZA)
W18 (SWKG0523SSA)
W19 (SWKG03111SSA)
W20 (SWKG127SSA)
W21 (SWKG1084LSA)
W22 (SWKG03109ZB)
W23 (SWKG04136LSA)
W24 (SWKG03112ZA)
W25 (SWKG1517STA)
W26 (SWKG1515SSA)
W27 (SWKG1082LSA)
W28 (SWKG06121ZB)
W29 (SWKG04138LSA)
W30 (SWKG04115LTA)

TOTAL BLOCK DIAGRAM



1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
Tone Signals
Control Signals
UKB
Key Switches
IC1
Decoder
CN1
LKB
Key Switches
IC1
Decoder
CN1
KNEE LEVEL
KLS
KLM
COMO
EXP
FSW1
FSW2
CN1
NW
CN5
CN3
CN4
PKB
CN2
CN1
COMO
Key Switches
COMO~COM2
CPC
IC10
LCD
LCD Driver
IC2
Reset IC
IC1
Sub CPU
LED & Switches
IC3~6
Buffer
CN3
CN1
CPL
IC1
LED & Switches
IC2~5
Buffer
IC6
Reset IC
Sub CPU
CN1
CPR
IC1
LED & Switches
IC3~5
Buffer
IC2
Reset IC
Sub CPU
CN1
MAIN
CN2
Data Bus
AB0~
UKBS
AB2
LKBS
IC69
Bus Buffer
IC1
INT1
Microcomputer (Main CPU)
IC2
Gate Array
IC3
Microcomputer (Sub CPU)
IC64-1
Low-Pass Filter
Q3
Integrator
IC4
Gate Array
Vibraphone Control
ACB0~ACB5
ACSA~ACSE
CN15
DB6,7
COMO
CN12
CN3
EXP
COMO~COM2
CN6
LCD1, ADS
CN7
LCD0, ADS,
MVR TEMP
CN1
JK1
JK2
JK3
MIDI THRU
MIDI OUT
MIDI IN
IC10
Photo Coupler
Q1
RST
IC5
ROM
IC6
RAM
IC7
RAM
D22,23,100
IC20
Memory Back-up
IC8
ROM
IC9
RAM
Q2
RST
RE0S
Address Bus
Data Bus
DRES
DALE
DW12
DR12
DW34
DR34
EALE
ESTB
CN4
CN11
CN8
CN10
CN9
PWMM
AUXC
LMS, LMF
IC14
Tone Generator LSI
Upper Poly
IC15, IC16-1
D/A Converter
IC17
Z5, IC16-2
Level Shifter
IC18~21
Analog Buffer Memory
IC37-2
IC66-2
U. Poly
IC13
Wave ROM
Address
Data
IC26
Tone Generator LSI
Low Poly
IC27, IC28-1
IC29
Z6, IC28-2
IC30~33
IC37-1
IC67-1
L. Poly
IC39
Tone Generator LSI
U/L Special
IC40, IC41-1
IC42
Z7, IC41-2
IC43~46
IC62-2
IC67-2
U/L Special
IC38
Wave ROM
IC62-1
IC68-1
U/L Solo
IC51
Tone Generator LSI
U/L Solo Accomp
IC52, IC53-1
IC54
Z8, IC53-2
IC55~58
IC63-2
RHY Accomp
IC63-1
MELO Accomp
IC66-1
Bass
SFR
UPO
LPO
SPE
SOLO
RACC
MACC
BASS
UTAB
LTAB
DPL
DPR
CPSL
PS
LAMP
IC1
Sub CPU
LED & Switches
IC4
LCD Driver
LCD
IC5
Reset IC
IC2,3
Buffer
CN1
LCD0
TEMP
MVR
VR2
VR1
Main Vol.
Tempo
Serial Bus
FDCN
CN5
CN1
CN3
+5
OPTION
FDCL
IC1
Sub CPU
CN9
CN3
IC5
RAM (64k bit)
IC4
Reset IC
CN4
FDCU
IC7
CN5
CN6
Floppy Disk Controller
IC6,8
Binary Counter
X1
IC3
OSC
CN2
Digital Disk Driver
SG
CN1
EALE, ESTB
IC16
Latch
IC1
Decoder
IC3
Tone Generator LSI
Upper Tab
IC4, IC5-1
D/A Converter
IC6
Z1, IC5-2
Level Shifter
IC7~10
Analog Buffer Memory
IC15-2
(A13~A17)
IC2
Wave ROM 1
IC17
Wave ROM 2
Q1
DW56
DR56
IC18
Tone Generator LSI
Lower Tab
IC19, IC20-1
IC21
Z2, IC20-2
IC22~25
IC15-1
IC31
Tone Generator LSI
Bass, BGS, DPR & DPL
IC32, IC33-1
IC34
Z3, IC33-2
IC35~38
IC43-2
IC44-1
IC44-2
IC30
Wave ROM
DW7
DR7
Bass
U Tab
L Tab
BGS & Drum
Percussion Left
BGS & Drum
Percussion Right
CN2
DRV
IC3
Digital Signal Processor
IC27
OR Gate
IC8
Decoder
CLK
IC6
RAM
IC7
RAM
IC4,5
Latch
IC15,16
Latch
IC17,18
Latch
D0~D7
D8~D15
IC19,20
Latch
IC35
D/A Converter
IC13,14
Latch
IC11,12
S/P Converter
IC9,10
Shift Register
IC34
A/D Converter
IC2
Bus Buffer
Data Bus
CN2
EJ
CN1
CN10
IC1~4, IC78
Latch
IC30
Dynamic Noise Reduction
REVL
REVR
IC60, IC61
IC5~13
Effect Selector
IC15-1
Mixing
IC15-2
Low-Pass Filter
Beep Sound Signal
IC16-1
Mixing
IC16-2
Low-Pass Filter
CHORUS MODULATION
IC17-1
Mixing
IC17-2
Low-Pass Filter
IC20
IC22-1
Compressor
IC25
BBD
IC29-1
Low-Pass Filter
IC23
IC22-2
Expander
IC29-2
Phase Inverter
IC28-2
Mixing
IC28-1
Mixing
IC26
Oscillator
IC27
Oscillator
IC24
Clock Generator
IC21
Level Sensor
CELESTE & STRING ENSEMBLE MODULATION
IC41, IC40-2
IC43, IC42-2
IC45, IC44-2
IC18-1
Mixing
IC18-2
Low-Pass Filter
IC37, IC38-1
Compressor
IC34~36
BBD
IC40-1
IC42-1
IC44-1
Low-Pass Filter
Expander
IC39
Level Sensor
Q42
Gate
Q6~12
3 Phase Oscillator
IC31~33
Clock Generator
TREMOLO MODULATION
IC19-1
Mixing
IC19-2
Low-Pass Filter
IC52
BBD
IC53
BBD
IC49-1
IC49-2
Low-Pass Filter
IC54
IC55
IC56,57
Dynamic Noise Reduction
IC46-1
Integrator
IC46-2
Integrator
LMS
LMF
Q14
Mixing
Q13
Buffer
IC50
Clock Generator
IC51
Clock Generator
IC38-2
Phase Inverter
IC47-2
Integrator
PWMM
DPR
IC62-1
Low-Pass Filter
DPL
IC62-2
Low-Pass Filter
BASS
IC14-1
Bass Volume
IC14-2
Low-Pass Filter
IC77-1
AUX Detector
A
B

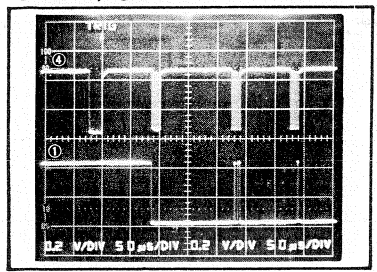


5
6
7
8
9
10
11
12
13
14
DRV
IC3 Digital Signal Processor
IC27 OR Gate
IC8 Decoder
IC6 RAM
IC7 RAM
IC4,5 Latch
IC2 Bus Buffer
IC15,16 Latch
IC17,18 Latch
IC19,20 Latch
IC35 D/A Converter
IC36
IC37-1
IC37-2
IC38-1 Low-Pass Filter
IC38-2 Low-Pass Filter
IC39-1 Low-Pass Filter
IC39-2 Low-Pass Filter
IC13,14 Latch
IC11,12 S/P Converter
IC9,10 Shift Register
IC34 A/D Converter
IC33-2
IC32-1 Low-Pass Filter
IC32-2 High-Pass Filter
IC21~26 Clock Generator
CLK
Data Bus
Address
ACB0~ACB5
ACSA~ACSE
AC IN
Power SW
ACP
Primary Circuit
Power Trans-former
PS
Rectifier
D1~6
IC1, Q1~7, D9~11 Reset Circuit & Regulator
LAMP
PA
D1,2,3,4,5,8,9,11,12 Rectifier
IC1-1
IC1-2
PMUT
NW
TWL
TWR
SPL
SPR
WF
SP5 TWEETER 16Ω
SP6 TWEETER 16Ω
SP2 20cm 8Ω
SP1 30cm 16Ω
SP4 20cm 8Ω
SNS +5 +15 -15
EJ
IC1~4, IC78 Latch
IC5~13 Effect Selector
IC15-1 Mixing
IC15-2 Low-Pass Filter
IC16-1 Mixing
IC16-2 Low-Pass Filter
IC17-1 Mixing
IC17-2 Low-Pass Filter
IC20, IC22-1 Compressor
IC25 BBD
IC29-1 Low-Pass Filter
IC23, IC22-2 Expander
IC29-2 Phase Inverter
IC28-2 Mixing
IC28-1 Mixing
CHORUS MODULATION
IC26 Oscillator
IC27 Oscillator
IC24 Clock Generator
IC21 Level Sensor
CELESTE & STRING ENSEMBLE MODULATION
IC18-1 Mixing
IC18-2 Low-Pass Filter
IC37, IC38-1 Compressor
IC34~36 BBD
IC40-1 Low-Pass Filter
IC42-1 Low-Pass Filter
IC44-1 Low-Pass Filter
IC41, IC40-2, IC43, IC42-2, IC45, IC44-2 Expander
IC39 Level Sensor
Q6~12 3 Phase Oscillator
IC31~33 Clock Generator
TREMOLO MODULATION
Q42 Gate
IC19-1 Mixing
IC19-2 Low-Pass Filter
IC52 BBD
IC53 BBD
IC49-1 Low-Pass Filter
IC49-2 Low-Pass Filter
IC54
IC55
IC56,57 Dynamic Noise Reduction
IC50 Clock Generator
IC51 Clock Generator
IC46-1 Integrator
IC46-2 Integrator
Q14 Mixing
Q13 Buffer
IC38-2 Phase Inverter
IC47-2 Integrator
IC30 Dynamic Noise Reduction
IC60, IC61 Mixing
IC58,59 Dynamic Noise Reduction
Beep Sound Signal
IC62-1 Low-Pass Filter
IC62-2 Low-Pass Filter
IC14-2 Low-Pass Filter
IC14-1 Bass Volume
IC77-1 AUX Detector
IC63-2
IC63-1
IC64-1
IC64-2
IC65-2
IC65-1
IC66-2 I/V Converter
IC66-1 I/V Converter
IC67-1 I/V Converter
IC67-2 I/V Converter
IC68-2 I/V Converter
IC68-1 I/V Converter
IC69-1 Mixing
IC69-2 Mixing
IC70-1 Mixing
IC71-2 Mixing
IC70-2 Phase Inverter
IC71-1 Mixing
IC72-2 Mixing
IC73-1 Mixing
IC74-1 Mixing
IC75-1 Mixing
Q15
Q16
Q17
Q26,28,30,32
Q27,29,31,33
Muting Control Circuit
Q35~37
IC73-2 Buffer
IC74-2 Buffer
IC75-2 Buffer
Q19
Q18
Q21
Q20
Q23
Q22
IC76-2
IC76-1
DPR, BASS
DPL, BASS
DPR, DPL, BASS
REVL
REVR
RS
CH1
CH2
CH3
PWMM
LMS
LMF
AUXC
LMS, LMF
JACK
Power Indicator
JK3 Mic
IC1-1
IC1-2
VR1
Mic Volume
JK4 Headphones Jack
Headphones
JK1
JK2
Mixing
L ch R ch LINE OUT
JK3
JK4
JK5
S2
2 ch
3 ch
S3
ON OFF MAIN MIX
L 3
R/R+L 2
1
LINE OUT
JK8
JK7
JK6
R/R+L
L
Bass
DRUMS
SEPARATED LINE OUT
S1
DIRECT EXP
JK2
JK1
AUX IN
SG
IC3 Tone Generator LSI Upper Tab
IC4, IC5-1 D/A Converter
IC6 Z1, IC5-2 Level Shifter
IC7~10 Analog Buffer Memory
IC15-2
IC16 Latch
IC1 Decoder
IC18 Tone Generator LSI Lower Tab
IC2 Wave ROM 1
IC17 Wave ROM 2
Q1
IC19, IC20-1 D/A Converter
IC21 Z2, IC20-2 Level Shifter
IC22~25 Analog Buffer Memory
IC15-1
IC31 Tone Generator LSI Bass, BGS, DPR & DPL
IC32, IC33-1 D/A Converter
IC34 Z3, IC33-2 Level Shifter
IC35~38 Analog Buffer Memory
IC30 Wave ROM
IC43-2
IC44-1
IC44-2
EALE, ESTB
(A13~A17)
Bass
U Tab
L Tab
BGS & Drum Percussion Left
BGS & Drum Percussion Right
IC14 Tone Generator LSI Upper Poly
IC15, IC16-1 D/A Converter
IC17 Z5, IC16-2 Level Shifter
IC18~21 Analog Buffer Memory
IC13 Wave ROM
IC37-2
IC66-2
U. Poly
IC26 Tone Generator LSI Low Poly
IC27, IC28-1 D/A Converter
IC29 Z6, IC28-2 Level Shifter
IC30~33 Analog Buffer Memory
IC37-1
IC67-1
L. Poly
IC39 Tone Generator LSI U/L Special
IC40, IC41-1 D/A Converter
IC42 Z7, IC41-2 Level Shifter
IC43~46 Analog Buffer Memory
IC38 Wave ROM
IC62-2
IC67-2
IC62-1
IC68-1
U/L Special
U/L Solo
IC51 Tone Generator LSI U/L Solo Accomp
IC52, IC53-1 D/A Converter
IC54 Z8, IC53-2 Level Shifter
IC55~58 Analog Buffer Memory
IC63-2
IC63-1
RHY Accomp
MELO Accomp
IC66-1 Bass
Vibraphone Control
IC4 Gate Array
Q3 Integrator
Filter
IC8 ROM
IC9 RAM
ALE
WR
RD
PF4~7
CS0
AL0-7
DRES DALE DW34 DR34
DRES DALE DW12 DR12
DRES DALE DW56 DR56
DW7 DR7
SFR UPO LPO SPE SOLO RACC MACC
BASS UTAB LTAB DPL DPR
CN1 CN2 CN3 CN4 CN5 CN6 CN7 CN8 CN9 CN10 CN11 CN15

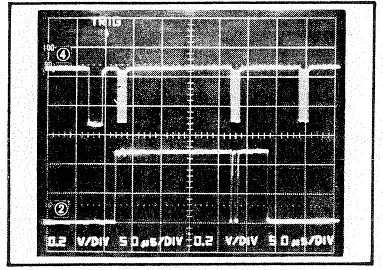
MAIN

MAIN CIRCUIT BOARD

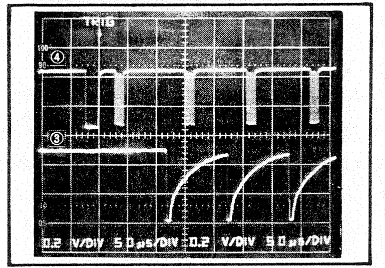
④ SCK, ① TXD



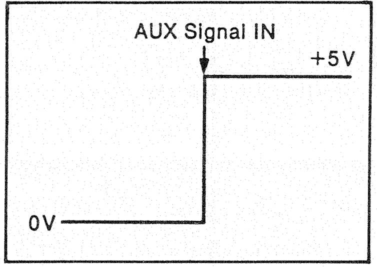
④ SCK, ② RXD



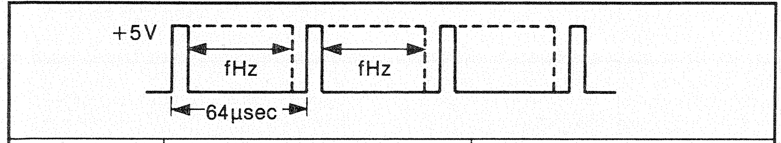
④ SCK, ③ EOB



⑦ AUXC

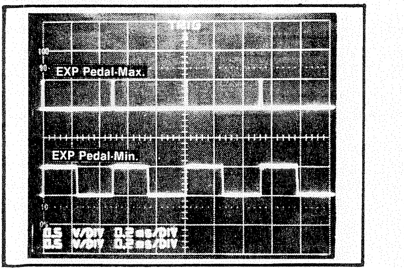

AUX Signal IN
+5V
0V

⑤ LMF, ⑥ LMS


+5V
fHz
fHz
64μsec

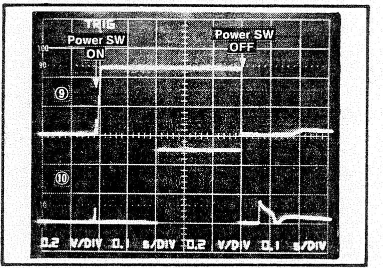
	Tremolo slow	Tremolo Fast
⑤ LMF	1 Hz	8.4 Hz~30.5 Hz
⑥ LMS	0.5 Hz	4.9 Hz~8.1 Hz

⑧ PWMM

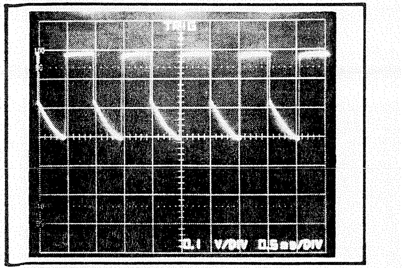


- Main Volume........................Max.
- Upper Key...........................ON

⑨ $\overline{\text{NMI}}$, ⑩ RST

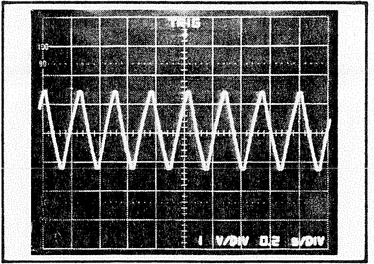


⑪ RTO



- Record ....ON
- Composer 1...........................ON
- Upper Key.............................ON

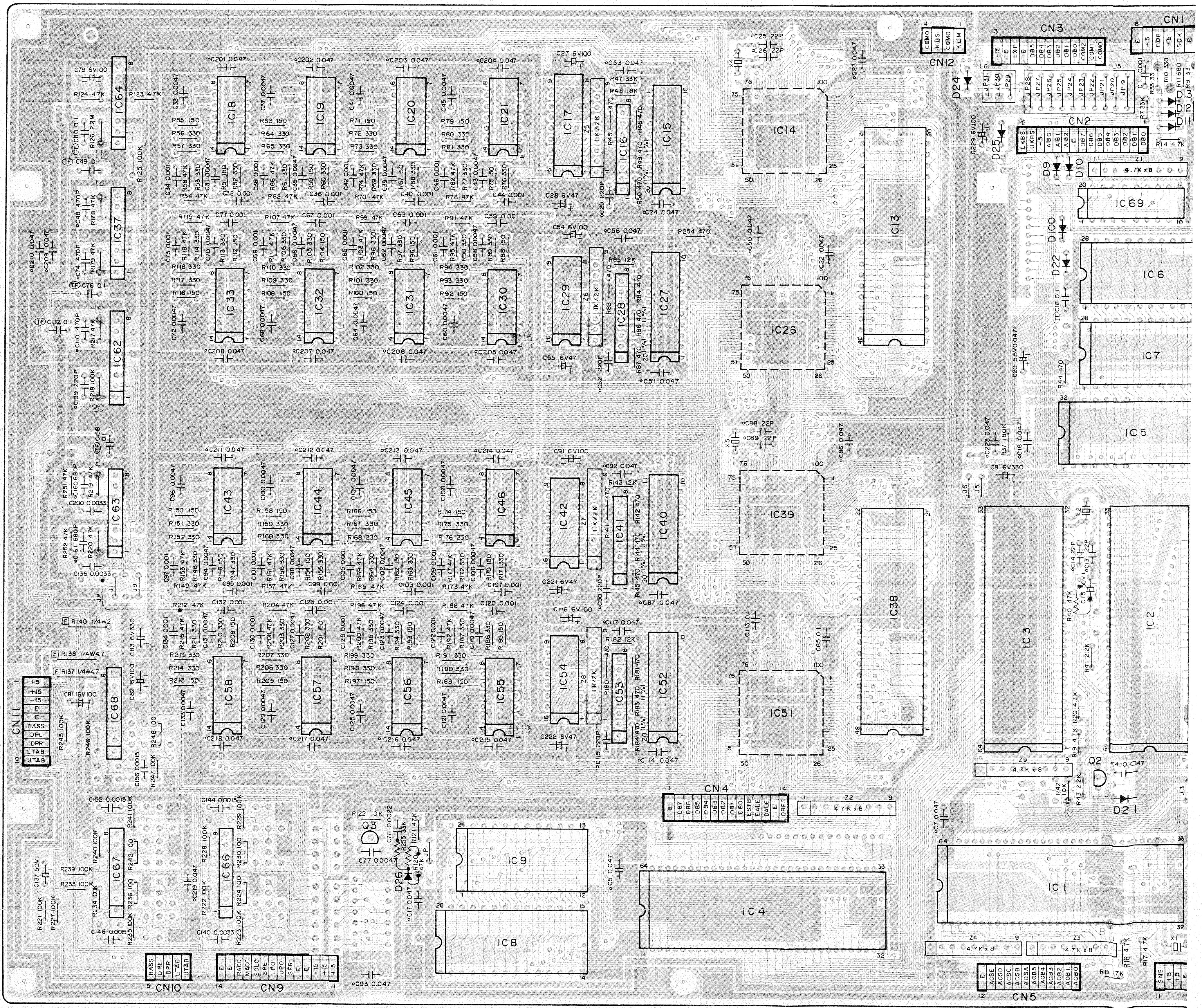
⑫



- U. Poly ....Vibraphone

Circuit view on top of P.C.B.

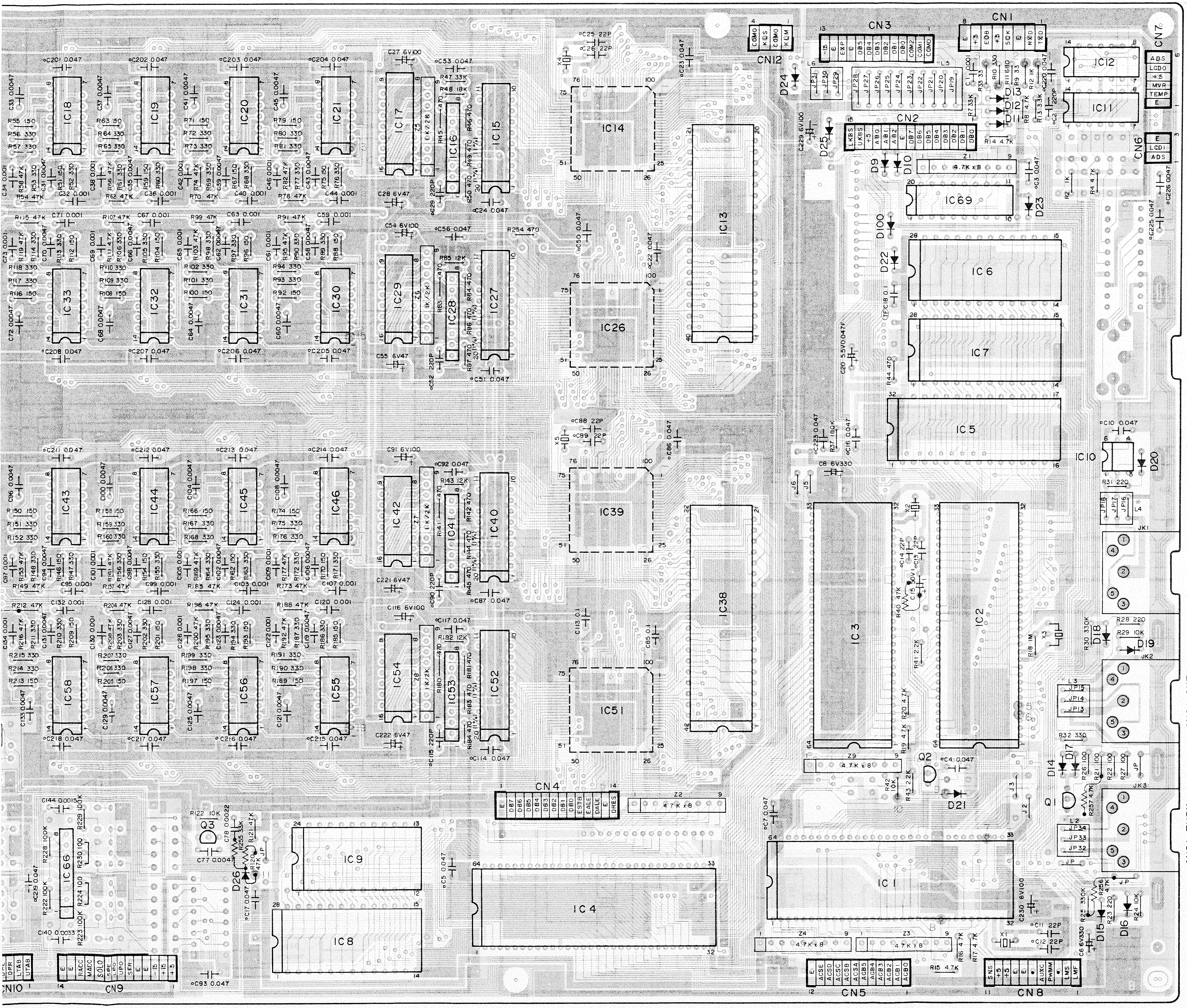
• [M] and [EZ] areas **SXPG140251** • Other are


CN1
CN2
CN3
CN4
CN5
CN9
CN10
CN11
CN12
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC26
IC27
IC28
IC29
IC30
IC31
IC32
IC33
IC37
IC38
IC39
IC40
IC41
IC42
IC43
IC44
IC45
IC46
IC51
IC52
IC53
IC54
IC55
IC56
IC57
IC58
IC62
IC63
IC64
IC66
IC67
IC68
IC69
Q1
Q2
D9
D10
D11
D12
D13
D21
D22
D24
D25
D26
D100
X1
X2
X3
X4

5 6 7 8 9 10 11 12 13 14

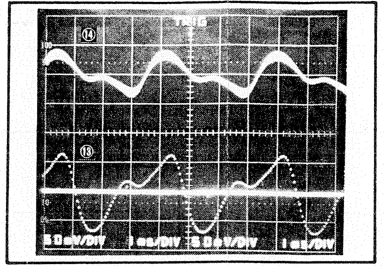
on top of P.C.B.

• [M] and [EZ] areas **SXPG140251** • Other areas **SXPG140221**



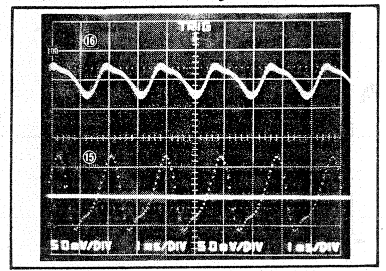
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN12
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC26
IC27
IC28
IC29
IC30
IC31
IC32
IC33
IC38
IC39
IC40
IC41
IC42
IC43
IC44
IC45
IC46
IC51
IC52
IC53
IC54
IC55
IC56
IC57
IC58
IC66
IC69
Q1
Q2
Q3
D9
D10
D11
D12
D13
D14
D15
D16
D17
D18
D19
D20
D21
D22
D23
D24
D25
D26
D100
JK1
JK2
JK3
MIDI IN
MIDI OUT
MIDI THRU

⑬, ⑭ Upper Poly



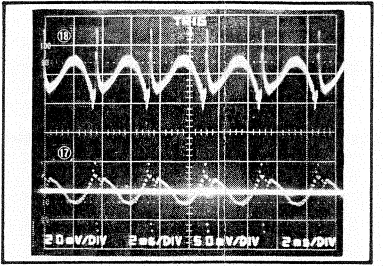
- U. Poly...French Horn • Upper Key...C4
- Poly Volume........................Max.
- Harmonic Control..............Normal

⑮, ⑯ Lower Poly



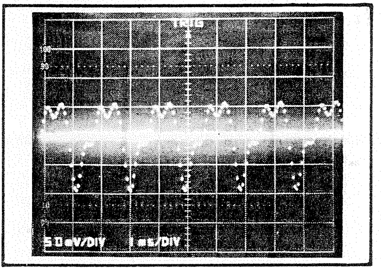
- L. Poly...French Horn • Lower Key...C4
- Poly Volume........................Max.
- Harmonic Control..............Normal

⑰, ⑱ Special



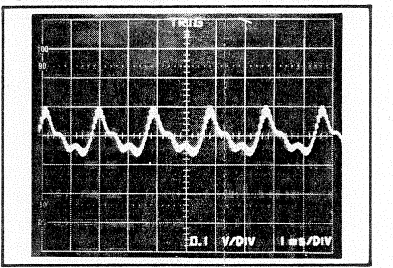
- U. Special.............................Synth Brass
- Upper Key...C4 • Special Vol....Max.
- Harmonic Control..............Normal

⑲ Solo



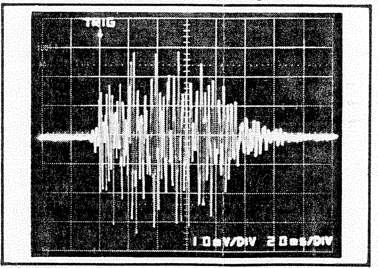
- U. Solo...Flute • Upper Key...C4
- Solo Volume........................Max.
- Harmonic Control..............Normal

⑳ Solo



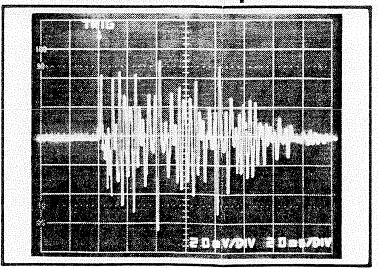
- U. Solo...Flute • Upper Key...C4
- Solo Volume........................Max.
- Harmonic Control..............Normal

㉑ Rhythmic Accomp



- Rhythm............................8 beat 2 (Acoustic)
- Fingered...ON • Lower Key...C4
- Accomp Balance................Max.

㉒ Melodic Accomp



- Rhythm............................8 beat 2 (Acoustic)
- Fingered...ON • Lower Key...C4
- Accomp Balance................Max.

MAIN

NOTES:

• IC'S

IC1, 3:	SVIG7810HCW
IC2:	SVIGM6050211
IC4:	SVIGM603A114
IC5:	SVIGAGX7AX2
IC6, 7:	SVIGD446415L
IC8:	SVIG2GX7BX2
IC9:	SVIGD446C25
IC10:	SVIGPC900
IC11:	SVIGM74LS07
IC12:	SVIGM74LS05
IC13:	SVIGU3C04158
IC14, 26, 39, 51:	MN6635
IC15, 27, 40, 52:	SVIGBA9221
IC16, 28, 41, 53:	SVIGM5238L
IC17, 29, 42, 54:	SVIGT74H4051
IC18~21, 30~33, 43~46, 55~58:	SVIGM74H4066
IC37, 62~64, 66~68:	SVIGM5218L
IC38 IC1:	SVIGU3C04161
IC38 IC2:	SVIGU3C04162
IC69:	SVIGM74HC244

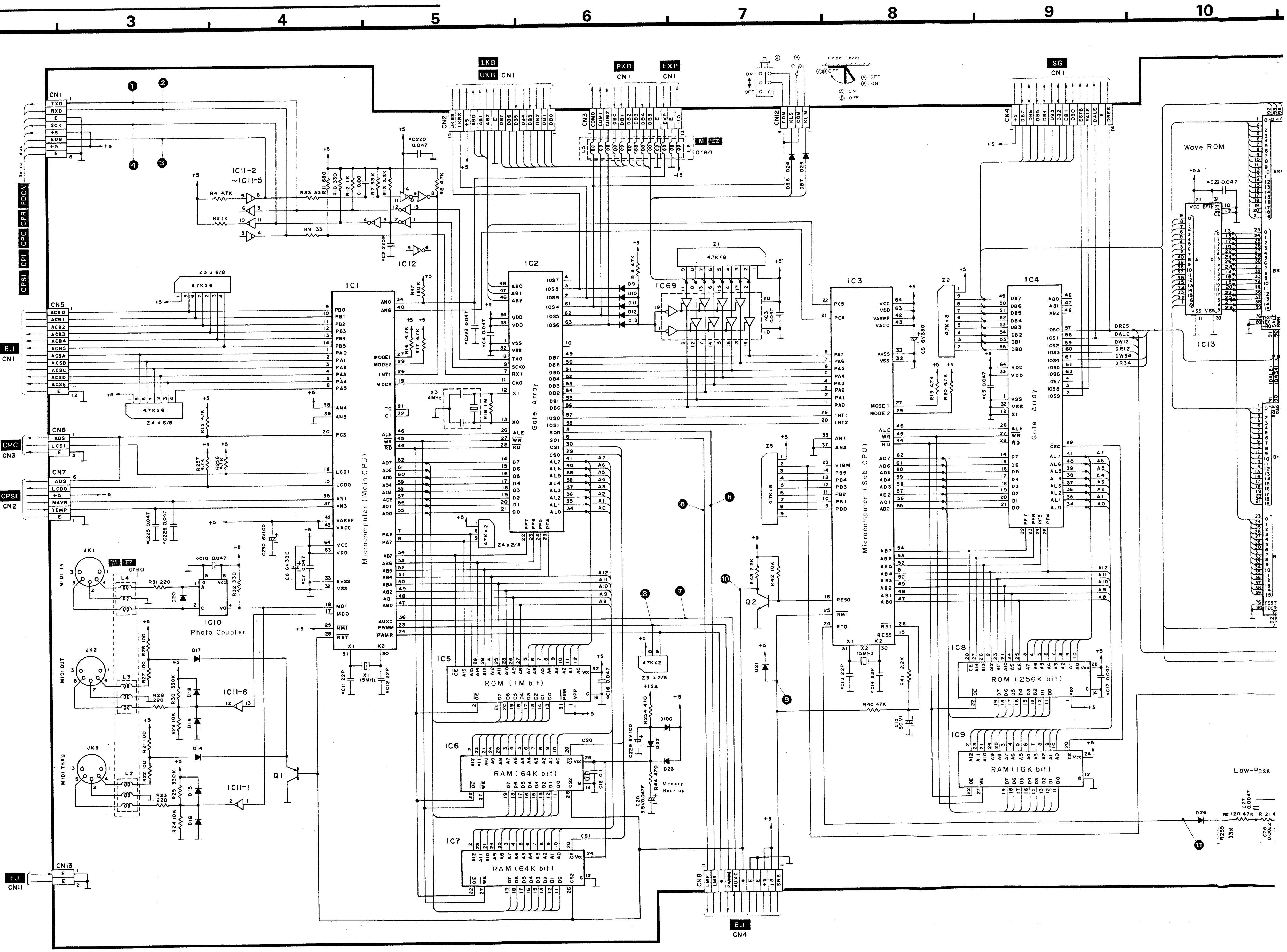
• TRANSISTORS

Q1:	2SA1015-GR
Q2, 3:	2SC2320LFG

• DIODES

D9~25, 100:	MA165TA5

MAIN CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
CN1
TXD
RXD
SCK
EOB
Serial Bus
FDCN
CPR
CPC
CPL
CPSL
IC11-2 ~IC11-5
IC12
LKB
UKB
CN1
CN2
PKB
EXP
CN3
M EZ area
Knee lever
ON
OFF
CN12
SG
CN4
Wave ROM
IC13
CN5
EJ
CN1
Z3 x 6/8
Z4 x 6/8
IC1
Microcomputer (Main CPU)
IC2
Gate Array
IC69
Z1
4.7K×8
IC3
Microcomputer (Sub CPU)
IC4
Gate Array
Z2
Z5
CN6
CPC
CN3
CN7
CPSL
CN2
X3 4MHz
Z4 x 2/8
JK1
MIDI IN
IC10
Photo Coupler
JK2
MIDI OUT
IC11-6
JK3
MIDI THRU
IC11-1
Q1
Q2
IC5
ROM (1M bit)
IC6
RAM (64K bit)
IC7
RAM (64K bit)
Z3 x 2/8
Memory Back up
IC8
ROM (256K bit)
IC9
RAM (16K bit)
Low-Pass
CN13
EJ
CN11
CN8
EJ
CN4
X1 15MHz
X2 15MHz

MAIN

NOTES:

- **IC'S**

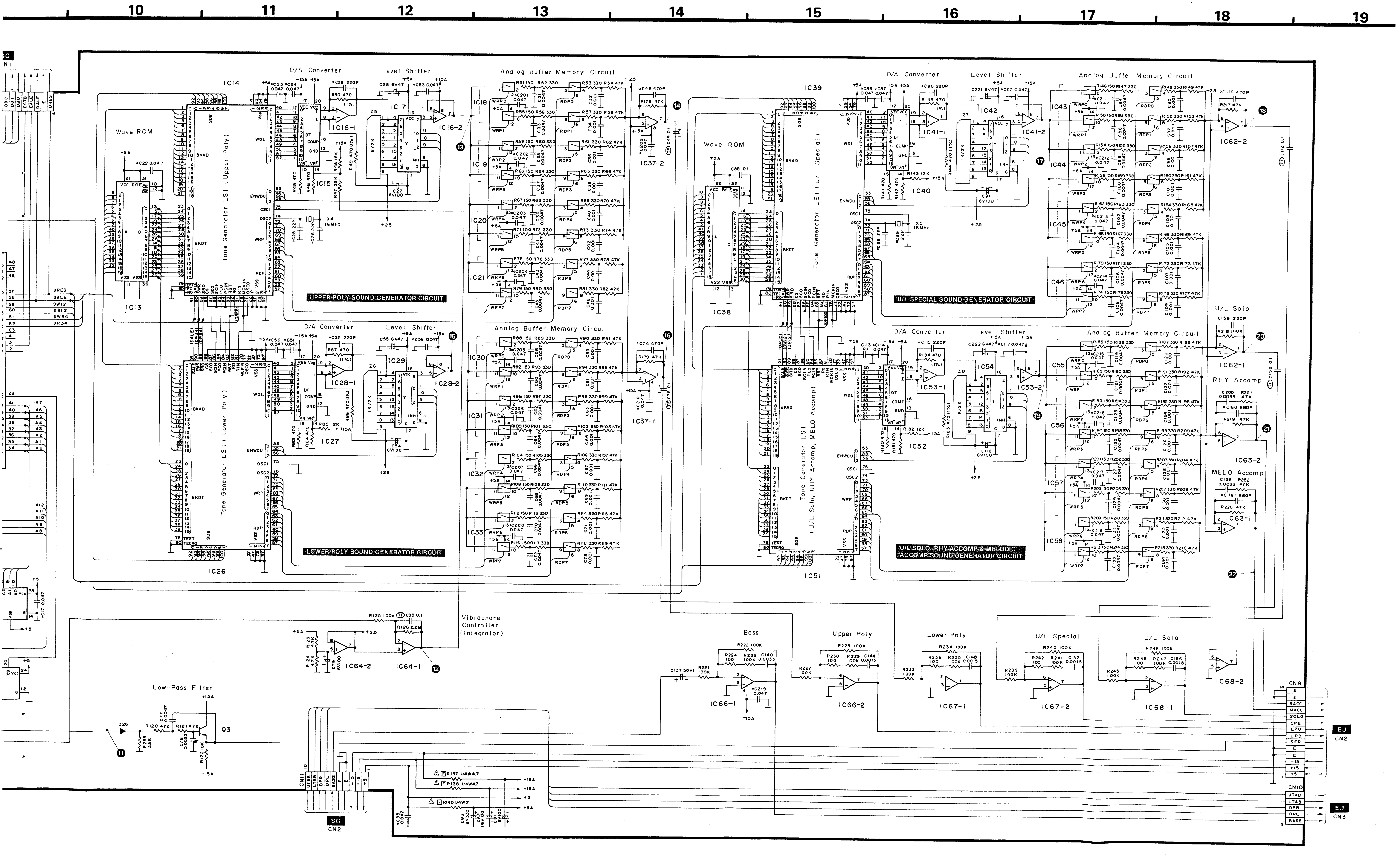
IC1, 3:	SVIG7810HCW
IC2:	SVIGM6050211
IC4:	SVIGM603A114
IC5:	SVIGAGX7AX2
IC6, 7:	SVIGD446415L
IC8:	SVIG2GX7BX2
IC9:	SVIGD446C25
IC10:	SVIGPC900
IC11:	SVIGM74LS07
IC12:	SVIGM74LS05
IC13:	SVIGU3C04158
IC14, 26, 39, 51:	MN6635
IC15, 27, 40, 52:	SVIGBA9221
IC16, 28, 41, 53:	SVIGM5238L
IC17, 29, 42, 54:	SVIGT74H4051
IC18~21, 30~33, 43~46, 55~58:	SVIGM74H4066
IC37, 62~64, 66~68:	SVIGM5218L
IC38 ─ IC1:	SVIGU3C04161
IC38 ─ IC2:	SVIGU3C04162
IC69:	SVIGM74HC244

- **TRANSISTORS**

Q1:	2SA1015-GR
Q2, 3:	2SC2320LFG

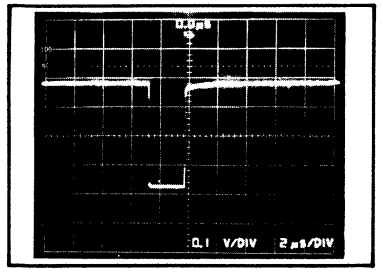
- **DIODES**

D9~25, 100:	MA165TA5


10
11
12
13
14
15
16
17
18
19
SG
CN1
Wave ROM
IC13
IC14
Tone Generator LSI (Upper Poly)
D/A Converter
Level Shifter
Analog Buffer Memory Circuit
IC15
IC16-1
IC16-2
IC17
IC18
IC19
IC20
IC21
IC37-2
UPPER POLY SOUND GENERATOR CIRCUIT
IC26
Tone Generator LSI (Lower Poly)
IC27
IC28-1
IC28-2
IC29
IC30
IC31
IC32
IC33
IC37-1
LOWER POLY SOUND GENERATOR CIRCUIT
IC38
IC39
Tone Generator LSI (U/L Special)
IC40
IC41-1
IC41-2
IC42
IC43
IC44
IC45
IC46
IC62-2
U/L SPECIAL SOUND GENERATOR CIRCUIT
IC51
Tone Generator LSI (U/L Solo, RHY Accomp, MELO Accomp)
IC52
IC53-1
IC53-2
IC54
IC55
IC56
IC57
IC58
U/L Solo
IC62-1
RHY Accomp
IC63-2
MELO Accomp
IC63-1
U/L SOLO, RHY ACCOMP & MELODIC ACCOMP SOUND GENERATOR CIRCUIT
X4 16MHz
X5 16MHz
Vibraphone Controller (Integrator)
IC64-1
IC64-2
Low-Pass Filter
Q3
D26
Bass
IC66-1
Upper Poly
IC66-2
Lower Poly
IC67-1
U/L Special
IC67-2
U/L Solo
IC68-1
IC68-2
CN9
E
RACC
MACC
SOLO
SPE
LPO
UPO
SFR
-15
+15
+5
EJ
CN2
CN10
UTAB
LTAB
DPR
DPL
BASS
EJ
CN3
CN11
SG
CN2
R137 1/4W4.7
R138 1/4W4.7
R140 1/4W2
-15A
+15A
+5
+5A
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲
⑳
㉑
㉒

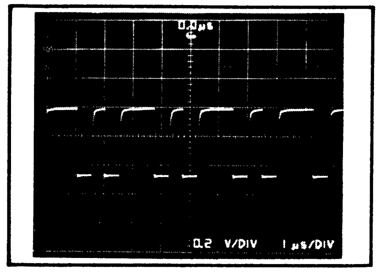
SOUND GENERATOR CIRCUIT DIAGRAM

❶ TBNK

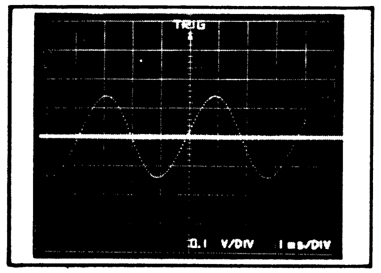


- U. Organ Presets...............5
- Upper Key...........................ON

❷

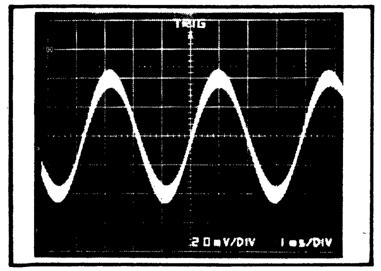


❸



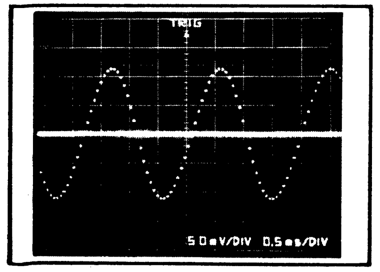
- U. Tab..................................Flute 16'
- Upper Key...........................C4
- Tab Volume..........................Max.

❹

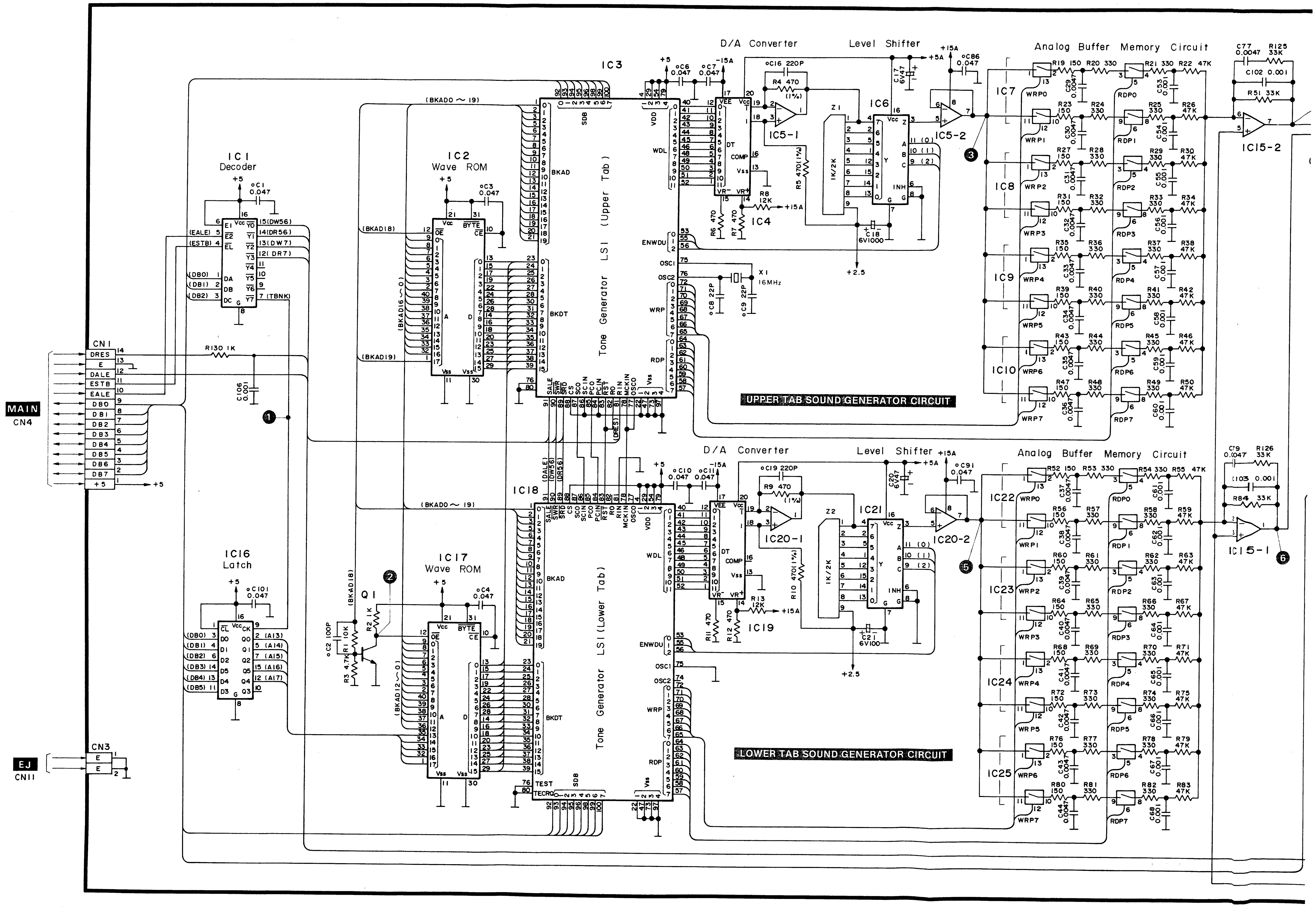


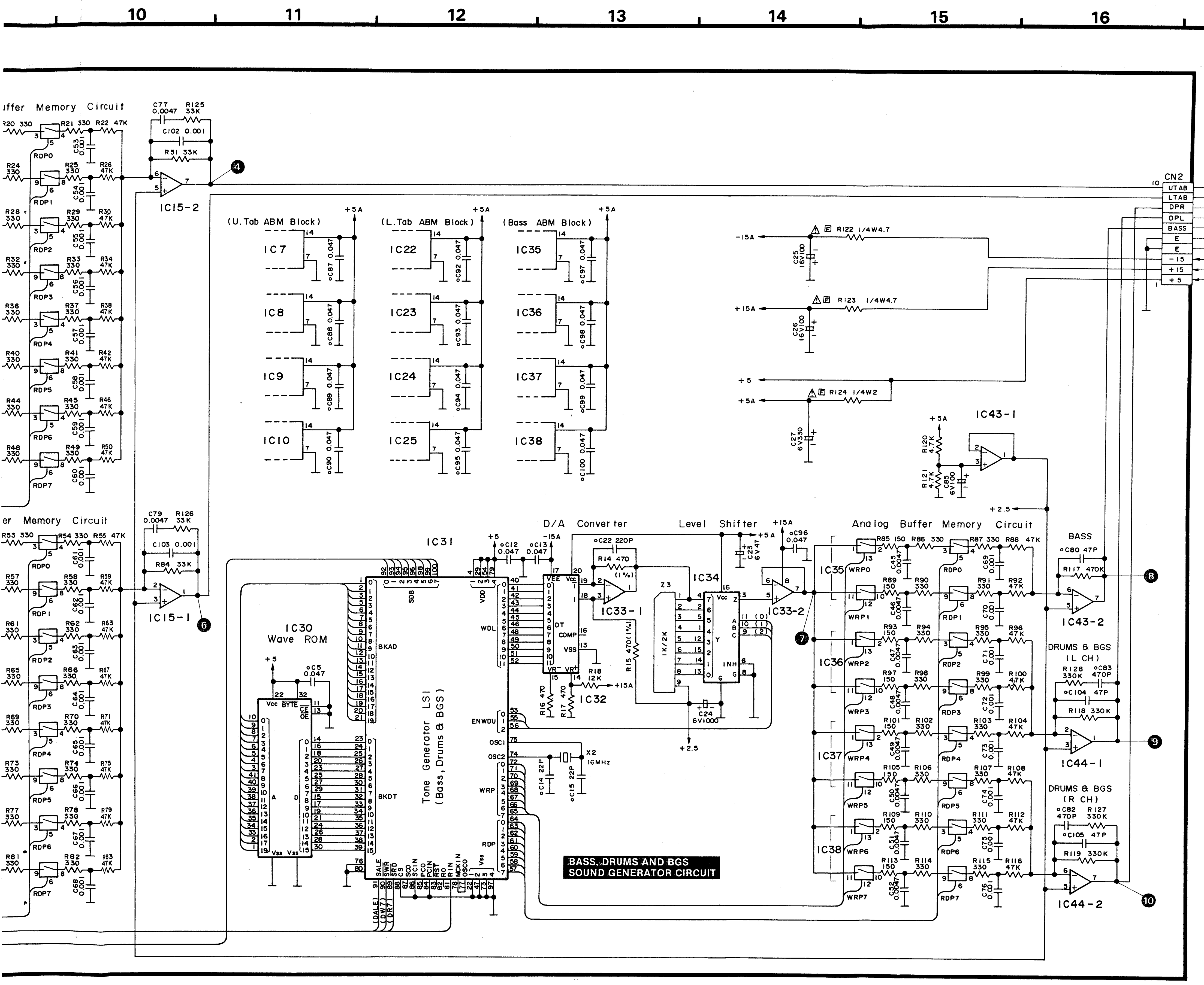
- U. Tab..................................Flute 16'
- Upper Key...........................C4
- Tab Volume..........................Max.

❺

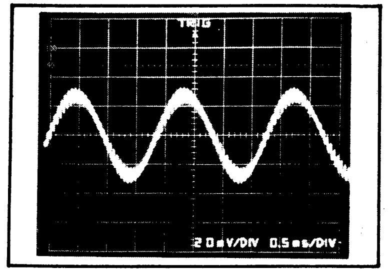


- L. Tab...................................Flute 8'
- Lower Key...........................C4
- Tab Volume..........................Max.


MAIN
CN4
CN1
DRES
E
DALE
ESTB
EALE
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
+5
EJ
CN11
CN3
R130 1K
C106 0.001
IC1
Decoder
C1 0.047
IC2
Wave ROM
C3 0.047
IC16
Latch
C101 0.047
IC17
Wave ROM
C4 0.047
Q1
C2 100P
R1 10K
R2 1K
R3 4.7K
IC3
Tone Generator LSI (Upper Tab)
IC18
Tone Generator LSI (Lower Tab)
(BKAD0 ~ 19)
BKAD
BKDT
SDB
WDL
ENWDU
OSC1
OSC2
WRP
RDP
X1 16MHz
C8 22P
C9 22P
C6 0.047
C7 0.047
C10 0.047
C11 0.047
D/A Converter
IC4
IC19
C16 220P
R4 470
R5 470
R6 470
R7 470
R8 12K
IC5-1
IC5-2
C19 220P
R9 470
R10 470
R11 470
R12 470
R13 12K
IC20-1
IC20-2
Level Shifter
Z1
Z2
IC6
IC21
C17 6V47
C18 6V1000
C20 6V47
C21 6V100
C86 0.047
C91 0.047
+15A
-15A
+5A
+2.5
Analog Buffer Memory Circuit
IC7
IC8
IC9
IC10
IC22
IC23
IC24
IC25
WRP0
WRP1
WRP2
WRP3
WRP4
WRP5
WRP6
WRP7
RDP0
RDP1
RDP2
RDP3
RDP4
RDP5
RDP6
RDP7
C77 0.0047
R125 33K
C102 0.001
R51 33K
IC15-2
C79 0.0047
R126 33K
C103 0.001
R84 33K
IC15-1
UPPER TAB SOUND GENERATOR CIRCUIT
LOWER TAB SOUND GENERATOR CIRCUIT
❶
❷
❸
❺
❻

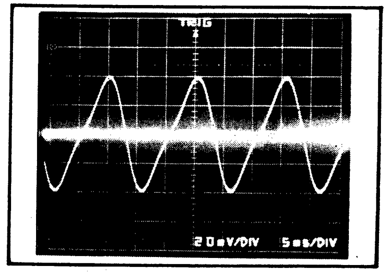

10
11
12
13
14
15
16
17
18
19
Buffer Memory Circuit
IC15-2
IC15-1
(U.Tab ABM Block)
(L.Tab ABM Block)
(Bass ABM Block)
IC7
IC8
IC9
IC10
IC22
IC23
IC24
IC25
IC35
IC36
IC37
IC38
+5A
-15A
+15A
+5
R122 1/4W4.7
R123 1/4W4.7
R124 1/4W2
IC43-1
+2.5
CN2
UTAB
LTAB
DPR
DPL
BASS
E
E
-15
+15
+5
MAIN
CN11
Memory Circuit
IC31
IC30
Wave ROM
Tone Generator LSI (Bass, Drums & BGS)
BKAD
BKDT
SDB
WDL
ENWDU
OSC1
OSC2
WRP
RDP
X2
16MHz
D/A Converter
IC33-1
IC32
Level Shifter
IC34
IC33-2
Z3
Analog Buffer Memory Circuit
BASS
IC43-2
DRUMS & BGS (L CH)
IC44-1
DRUMS & BGS (R CH)
IC44-2
BASS, DRUMS AND BGS SOUND GENERATOR CIRCUIT
④
⑥
⑦
⑧
⑨
⑩

⑥



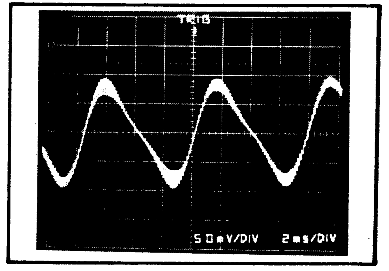
- L. Tab..................................Flute 8'
- Lower Key C4
- Tab Volume.........................Max.

⑦



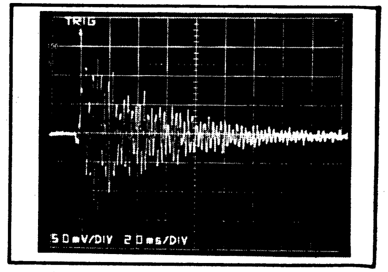
- Bass...Bass 8' • Pedal Key...C2
- Bass Volume.......................Max.
- Harmonic Control...............Normal

⑧



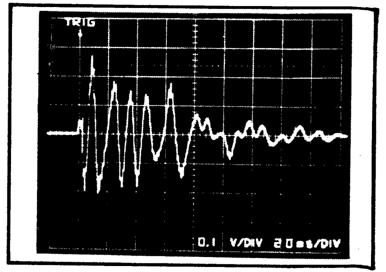
- Bass...Bass 8' • Pedal Key...C2
- Bass Volume.......................Max.

⑨



- Keyboard Percussion ....ON
- High Bongo ....Lower Key G2, ON
- Drums Volume....................Max.

⑩



- Keyboard Percussion ....ON
- Bass Drum 2 ....Lower Key C#1, ON
- Drums Volume....................Max.

NOTES:

- IC'S

IC1:	SVIGM74LS137
IC2:	SVIGU3C04159
IC3, 18, 31:	MN6635
IC4, 19, 32:	SVIGBA9221
IC5, 20, 33:	SVIGM5238L
IC6, 21, 34:	SVIGT74H4051
IC7~10, 22~25, 35~38:	SVIGM74H4066
IC15, 43, 44:	SVIGM5218L
IC16:	MN40174B
IC17:	SVIGU3C04160
IC30 — IC1:	SVIGU3C04163
IC30 — IC2:	SVIGU3C04164

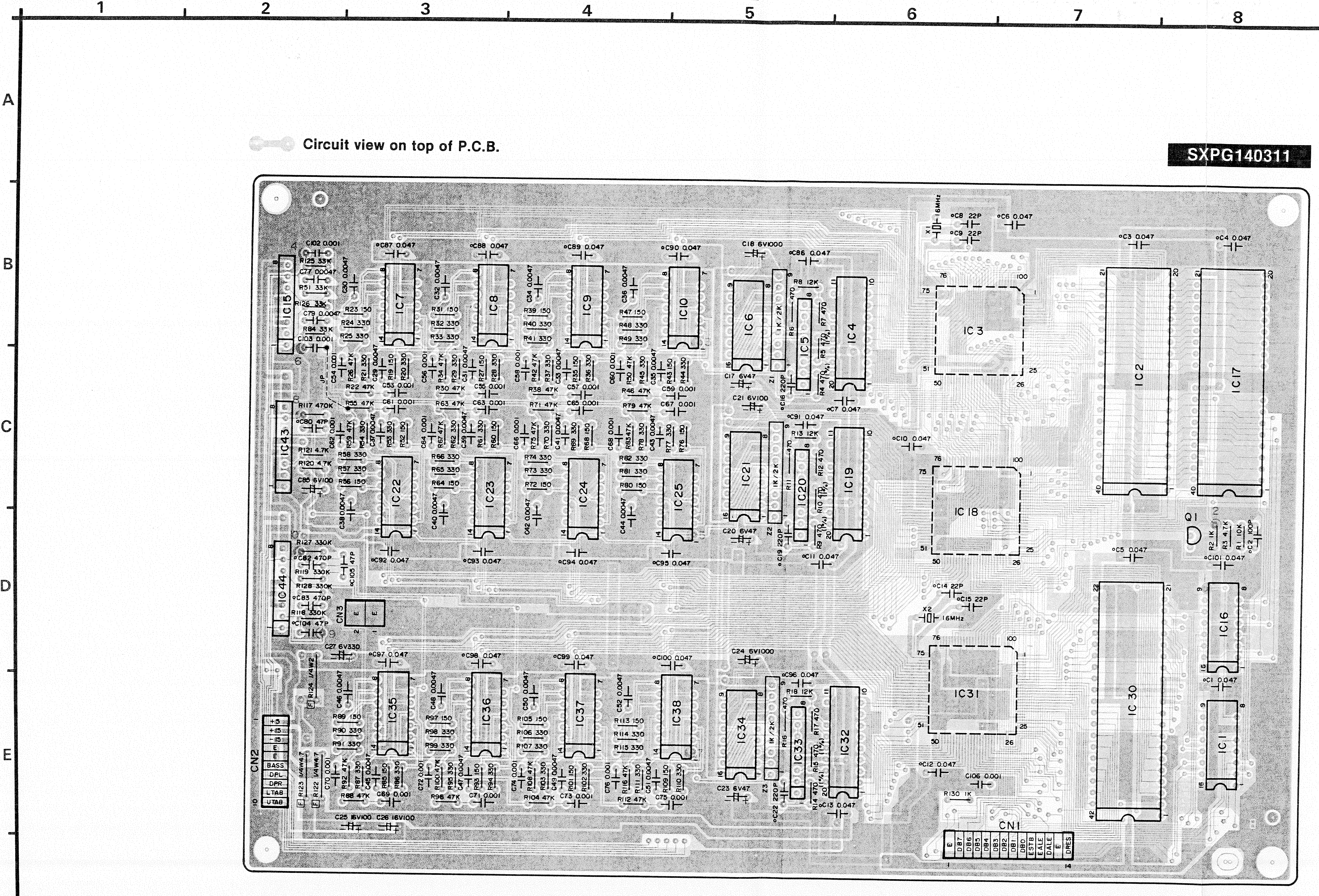
- TRANSISTOR

Q1:	2SC1047C

SG SOUND GENERATOR CIRCUIT BOARD

Circuit view on top of P.C.B.

SXPG140311


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
IC15
IC7
IC8
IC9
IC10
IC6
IC5
IC4
IC3
IC2
IC17
IC43
IC22
IC23
IC24
IC25
IC21
IC20
IC19
IC18
Q1
IC44
CN3
IC16
IC31
IC30
IC1
IC35
IC36
IC37
IC38
IC34
IC33
IC32
CN2
+5
+15
-15
E
E
BASS
DPL
DPR
LTAB
UTAB
CN1
E
DB7
DB6
DB5
DB4
DB3
DB2
DB1
DB0
ESTB
EALE
DALE
E
DRES
X1 16MHz
X2 16MHz

NOTES:

- IC'S

IC1:	SVIGM74LS137
IC2:	SVIGU3C04159
IC3, 18, 31:	MN6635
IC4, 19, 32:	SVIGBA9221
IC5, 20, 33:	SVIGM5238L
IC6, 21, 34:	SVIGT74H4051
IC7～10, 22～25, 35～38:	SVIGM74H4066
IC15, 43, 44:	SVIGM5218L
IC16:	MN40174B
IC17:	SVIGU3C04160
IC30 — IC1:	SVIGU3C04163
IC30 — IC2:	SVIGU3C04164

- TRANSISTOR

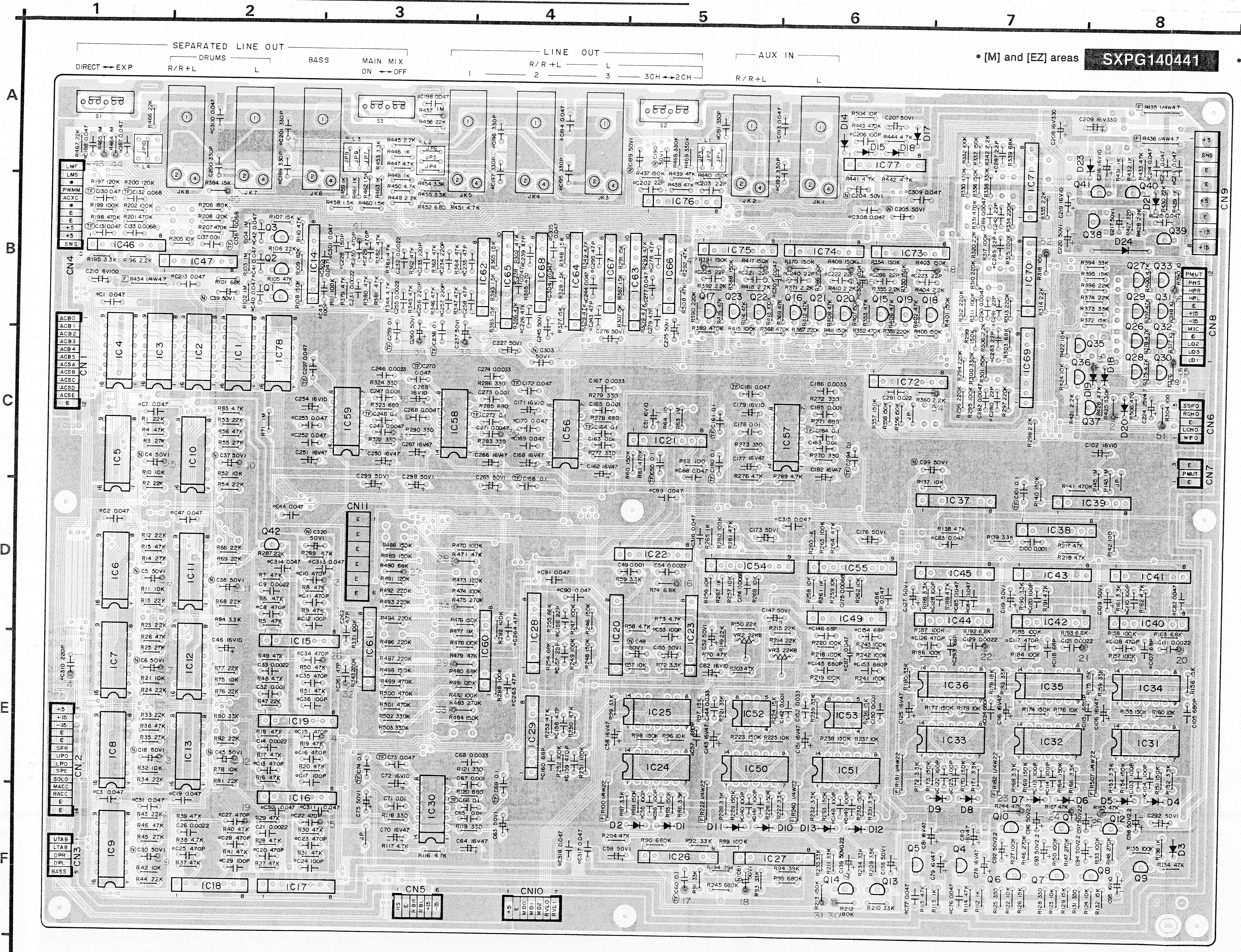
Q1:	2SC1047C

EFFECT, MIXING & JACK CIRCUIT BOARD

• [M] and [EZ] areas **SXPG140441**

• Other areas **SXPG140421**

Circuit view on top of P.C.B.


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
SEPARATED LINE OUT
DRUMS
DIRECT ←→ EXP
R/R+L
L
BASS
MAIN MIX
ON ←→ OFF
LINE OUT
R/R+L
L
1
2
3
3CH ←→ 2CH
AUX IN
R/R+L
L
S1
S2
S3
JK1
JK2
JK3
JK4
JK5
JK6
JK7
JK8
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN11
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
IC28
IC29
IC30
IC31
IC32
IC33
IC34
IC35
IC36
IC37
IC38
IC39
IC40
IC41
IC42
IC43
IC44
IC45
IC46
IC47
IC49
IC50
IC51
IC52
IC53
IC54
IC55
IC56
IC57
IC58
IC59
IC60
IC61
IC62
IC63
IC64
IC65
IC66
IC67
IC68
IC69
IC70
IC71
IC72
IC73
IC74
IC75
IC76
IC77
IC78
LMF
LMS
PWMM
ACXC
SNS
ACB0
ACB1
ACB2
ACB3
ACB4
ACB5
ACSA
ACSB
ACSC
ACSD
ACSE
SFR
UPO
LPO
SPE
SOLO
MACC
RACC
UTAB
LTAB
DPR
DPL
BASS
MD0
MD1
MD2
RVLO
RVL
PMUT
PHS
HPR
HPL
MIC
LO2
LO3
LO1
SSPO
RQHO
LCHO
WFO

NOTES:

• IC'S

IC1~4, 78:	MN40174B
IC5~11, 13:	SVIGTC4052BP
IC12:	SVIGTC4053BP
IC14~19, 22, 26~29, 38, 40, 42, 44, 46, 47, 49, 60~62, 66~77:	SVIGM5218L
IC20, 23, 37, 41, 43, 45:	SVIGUPC1252H
IC21, 39:	SVIGUPC1253H
IC24, 31~33, 50, 51:	SVIGMSM4011
IC25, 34~36:	MN3004
IC30, 56~59:	SVIGLM1894N
IC52, 53:	MN3006
IC54, 55:	SVIGBA6110
IC63~65:	SVIGM5241L

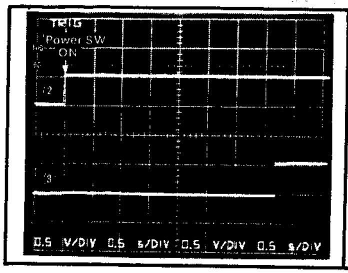
• TRANSISTORS

Q1~3, 15~23, 42:	2SJ105GR
Q4, 6~14, 28, 29, 36~39:	2SC2320LFG
Q5, 26, 27, 35, 40, 41:	2SA1015-GR
Q30, 31:	2SC3940ARS
Q32, 33:	2SA1534ARS

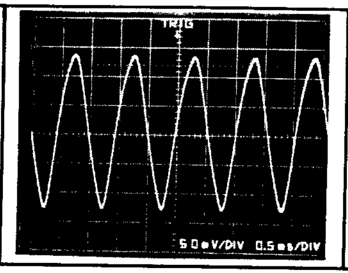
• DIODES

D1~21, 24:	MA165TA5
D23:	MA4062
D24:	SVDGRK14

②, ③

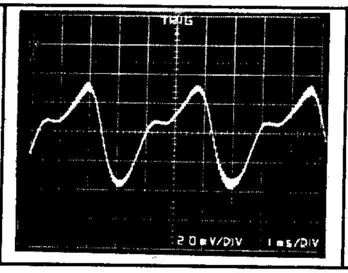


④ SFR



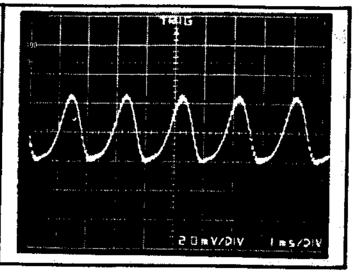
- Record ....ON
- Composer 1.........................ON
- Upper Key............................ON

⑤ U. Poly



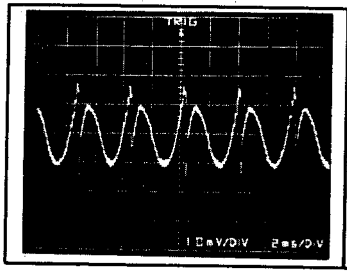
- U. Poly...French Horn • Upper Key...C4
- Upper Poly Volume ....Max.
- Harmonic Control...............Normal

⑥ L. Poly



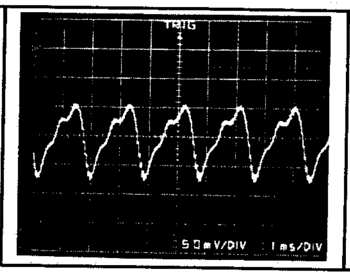
- L. Poly...French Horn • Lower Key...C4
- Lower Poly Volume............Max.
- Harmonic Control...............Normal

⑦ Special



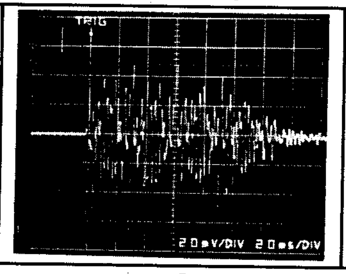
- U. Special...Synth brass • Upper Key...C4
- Special Volume ....Max.
- Harmonic Control..............Normal

⑧ Solo

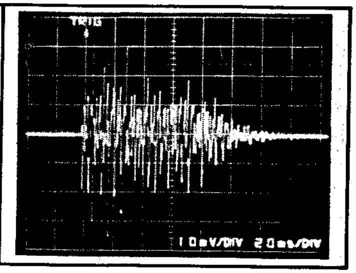


- U. Solo...Flute • Upper Key...C4
- Solo Volume........................Max.
- Harmonic Control...............Normal

⑨ Melodic Accomp

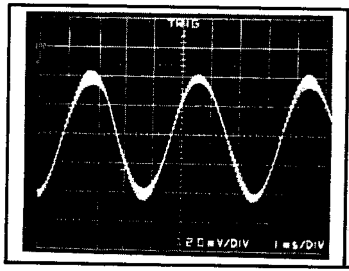


⑩ Rhythmic Accomp



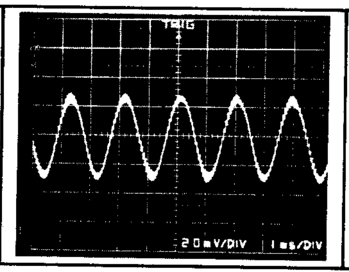
- Rhythm ....8 beat 2 (Acoustic)
- Fingeard...ON • Lower Key, C3...ON
- Accomp Volume.................Max.

⑪ U. Tab



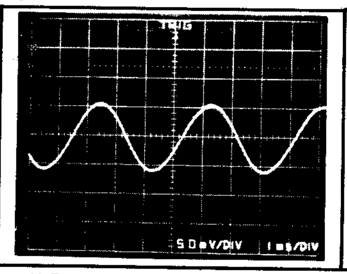
- U. Tab ....Flute 16′
- Upper Key............................C4
- Tab Volume.........................Max.

⑫ L. Tab



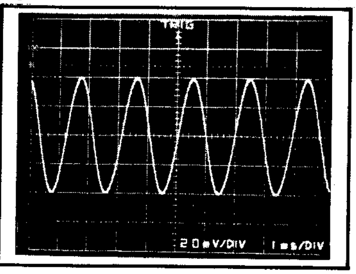
- L. Tab...................................Flute 8′
- Lower Key C4
- Tab Volume.........................Max.

⑬



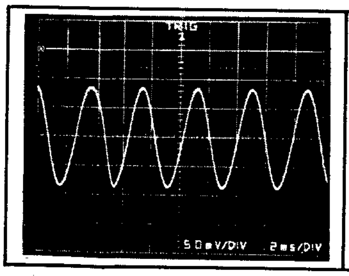
- U. Tab ....Flute 16′
- Upper Key............................C4
- Tab Volume.........................Max.

⑭

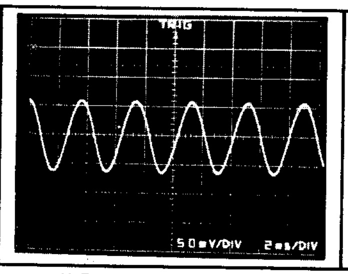


- L. Tab...................................Flute 8′
- Lower Key C4
- Tab Volume.........................Max.

⑮

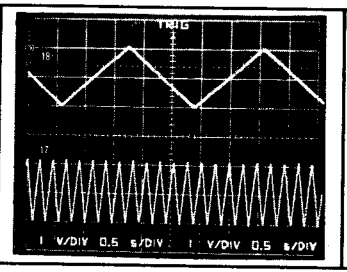


⑯



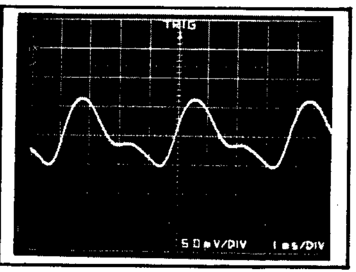
- Chorus ....U. Tab ON
- U. Tab ....Flute 16′
- Upper Key...C4 • Tab Volume...Max.

⑰, ⑱



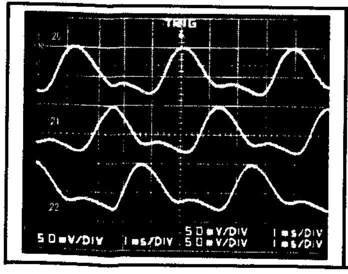
- Chorus ....U. Tab ON

⑲

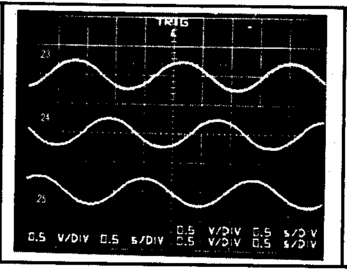


- Chorus...U. Poly ON • Upper Key...C4
- U. Poly...French Horn • Poly Vol....Max.
- Harmonic Control...............Normal

⑳, ㉑, ㉒

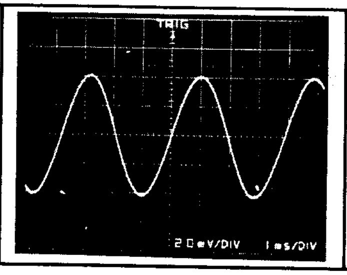


㉓, ㉔, ㉕

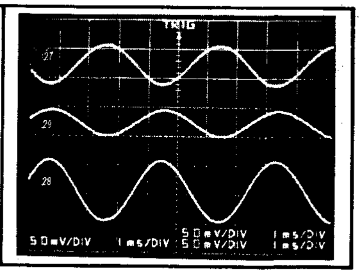


- Celeste...U. Poly ON • Upper Key...C4
- U. Poly...French Horn • Poly Vol....Max.
- Harmonic Control...............Normal

㉖

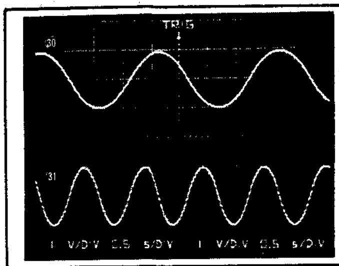


㉗, ㉘, ㉙



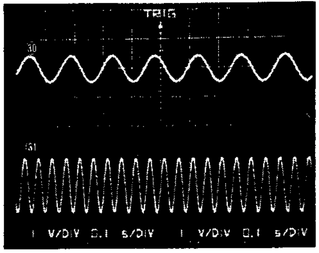
- Tremolo ....U. Tab ON
- U. Tab ....Flute 16′
- Upper Key...C4 • Tab Volume...Max.

㉚, ㉛



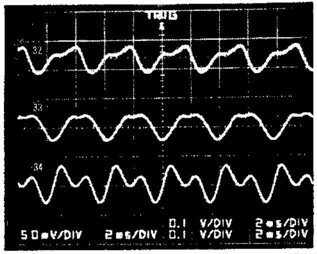
- Tremolo ....Slow

㉚, ㉛



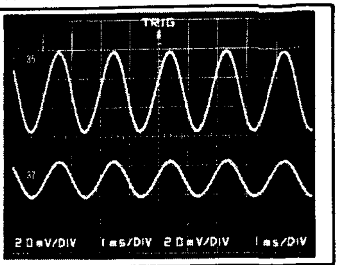
- Tremolo ....fast

㉜, ㉝, ㉞



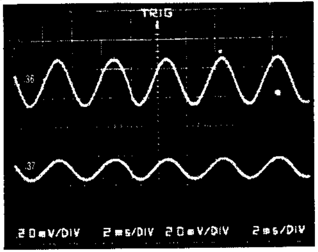
- U. Poly...French Horn • Upper Key...C4
- Poly Volume.......................Max.
- Reverb...HALL 3 Depth...Step 3

㉟, ㊲



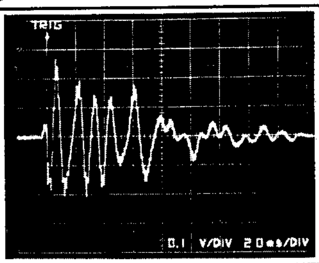
- L. Tab...Flute 8' • Lower Key...C4
- Tab Volume.........................Max.
- Reverb Depth......................OFF

㊱, ㊲



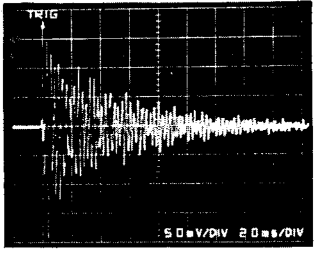
- U. Tab...Flute 16' • Upper Key...C4
- Tab Volume.........................Max.
- Reverb Depth......................OFF

㊳



- Keyboard Percussion ....ON
- Bass Drums 2 (Lower Key C#1)................ON
- Drums Volume....................Max.

㊴



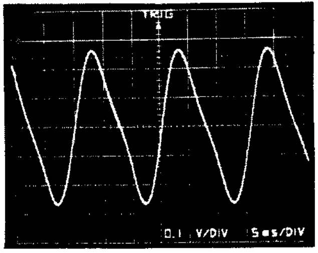
- Keyboard Percussion ....ON
- High Bongo (Lower Key G2)..................ON
- Drums Volume....................Max.

㊵ Main Vol., EXP Control

EXP \ Main Vol.	MAX.	MIN.
MAX.	−0.4V	−3.5V
MIN.	−6.2V	−10V

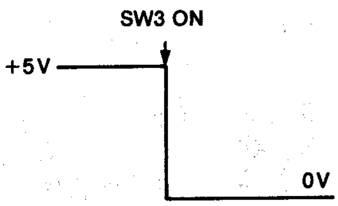
- Upper Key............................ON

㊶

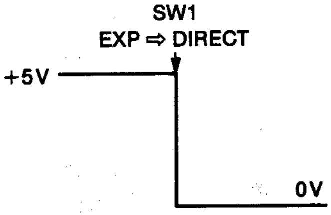


- Bass...16' • Pedal Key...C2
- Bass Volume.......................Max.

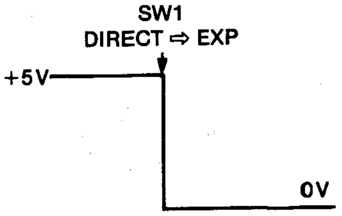
㊷



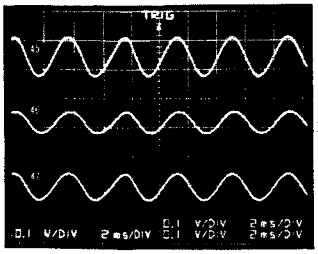
㊸



㊹

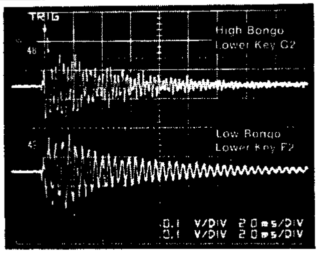


㊺, ㊻, ㊼



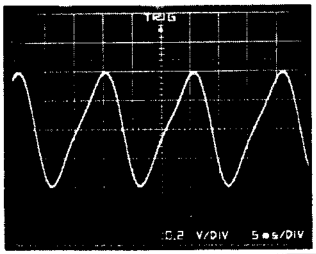
- U. Tab...Flute 16' • Upper Key...C4
- Reverb Depth......................OFF
- EXP, Main Vol., Tab Vol. ...Max.

㊽, ㊾



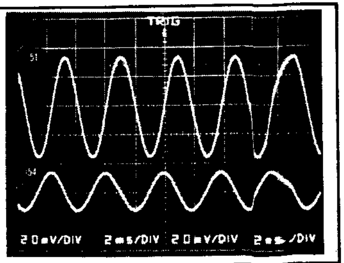
- SW1.....................................DIRECT
- Drums Volume....................Max.

㊿



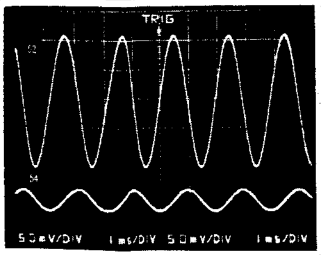
- SW1.....................................DIRECT
- Bass...16' • Pedal Key...C2
- Bass Volume.......................Max.

(51), (54)



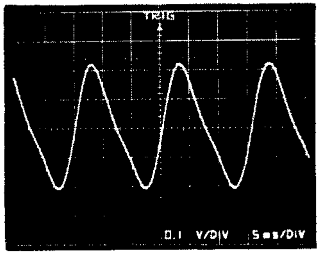
- U. Tab...Flute 16' • Upper Key...C4
- Reverb Depth......................OFF
- EXP, Main Vol., Tab Vol. ...Max.

(52), (54)



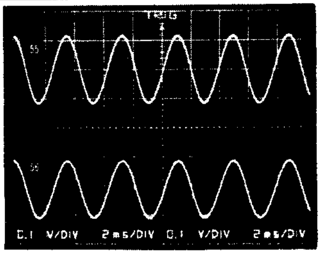
- L. Tab...Flute 8' • Lower Key...C4
- Reverb Depth......................OFF
- EXP, Main Vol., Tab Vol. ...Max.

(54)



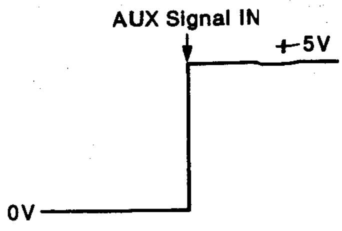
- Bass...16' • Pedal Key...C2
- EXP, Main Volume ....Max.
- Bass Volume.......................Max.

(55), (56)



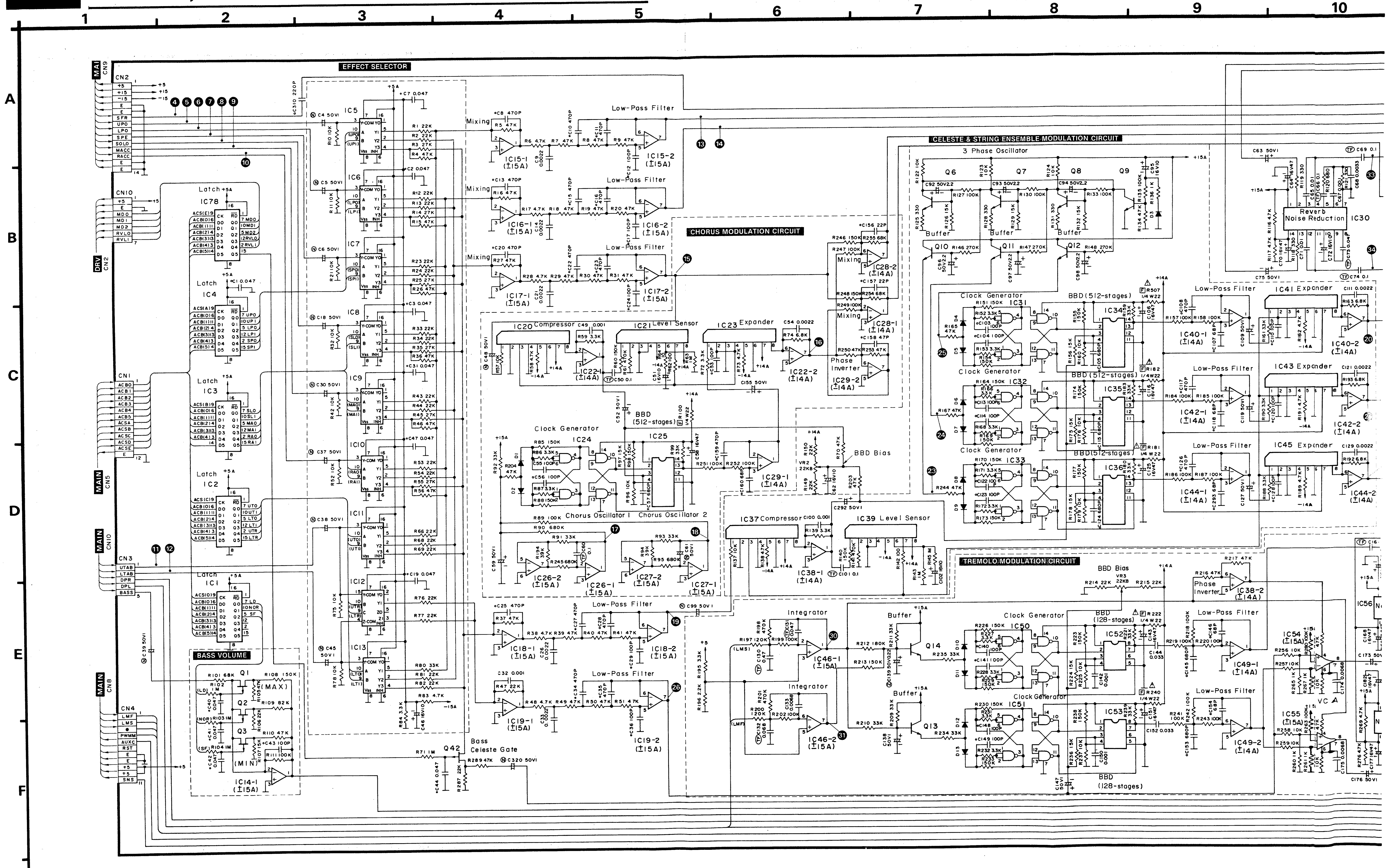
- U. Tab...Flute 16' • Upper Key...C4
- EXP, Main Vol., Tab Vol. ...Max.
- Reverb.................................OFF

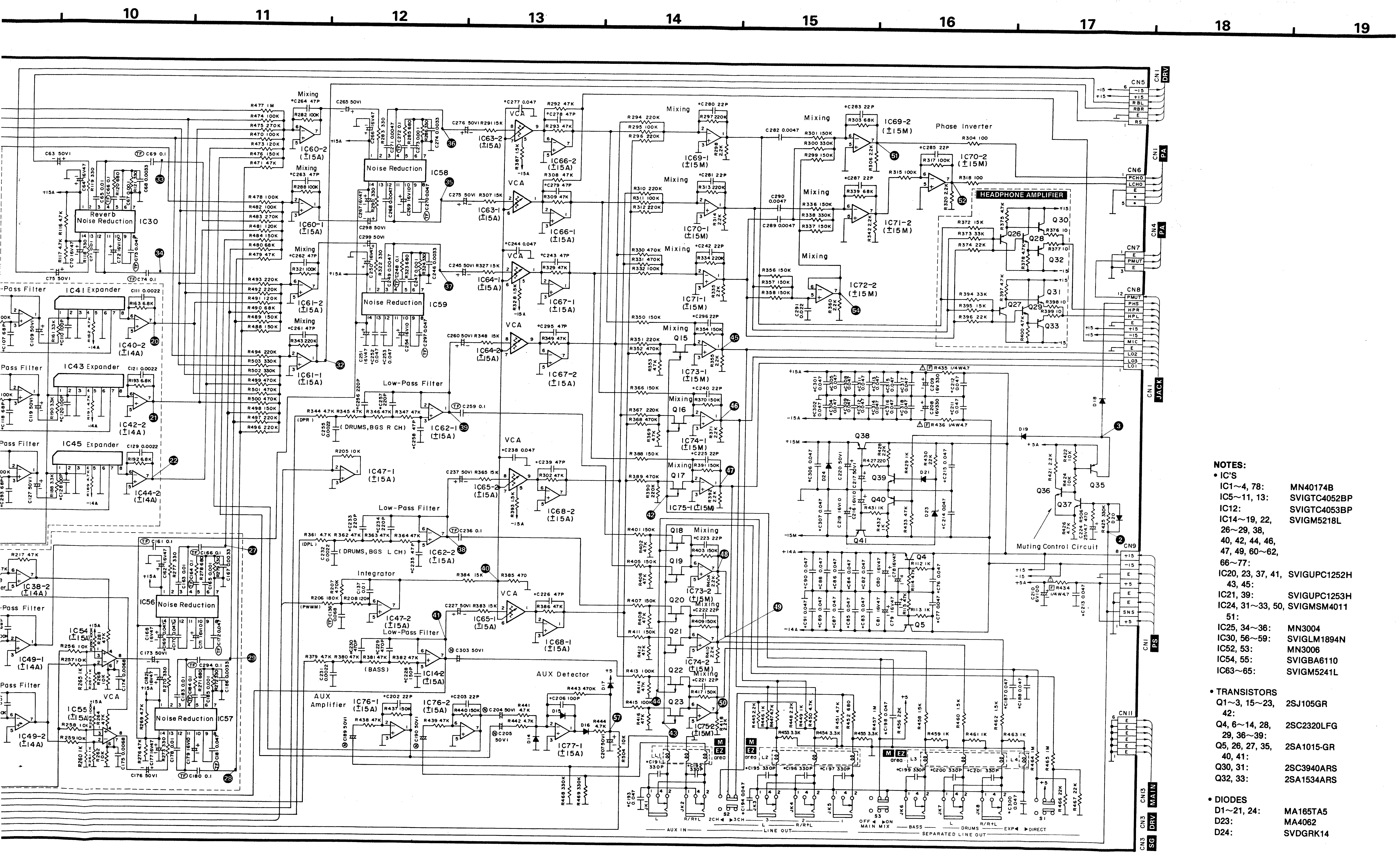
(57) AUXC



EJ

EFFECT, MIXING & JACK CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
MAIN CN9
CN2
DRV CN2
CN10
CN1
MAIN CN5
MAIN CN10
CN3
MAIN CN8
CN4
EFFECT SELECTOR
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
Latch IC78
Latch IC4
Latch IC3
Latch IC2
Latch IC1
Mixing
Low-Pass Filter
IC15-1 (±15A)
IC15-2 (±15A)
IC16-1 (±15A)
IC16-2 (±15A)
IC17-1 (±15A)
IC17-2 (±15A)
IC18-1 (±15A)
IC18-2 (±15A)
IC19-1 (±15A)
IC19-2 (±15A)
BASS VOLUME
Q1
Q2
Q3
(MAX)
(MIN)
IC14-1 (±15A)
Q42
Bass Celeste Gate
CHORUS MODULATION CIRCUIT
IC20 Compressor
IC21 Level Sensor
IC23 Expander
IC22-1 (±14A)
IC22-2 (±14A)
BBD (512-stages)
Clock Generator
IC24
IC25
IC29-1 (±14A)
Chorus Oscillator 1
Chorus Oscillator 2
IC26-2 (±15A)
IC26-1 (±15A)
IC27-2 (±15A)
IC27-1 (±15A)
Mixing
IC28-2 (±14A)
IC28-1 (±14A)
Phase Inverter
IC29-2 (±14A)
BBD Bias
IC37 Compressor
IC39 Level Sensor
IC38-1 (±14A)
CELESTE & STRING ENSEMBLE MODULATION CIRCUIT
3 Phase Oscillator
Q6
Q7
Q8
Q9
Buffer
Q10
Q11
Q12
Reverb Noise Reduction
IC30
Clock Generator
IC31
IC32
IC33
BBD (512-stages)
IC34
IC35
IC36
Low-Pass Filter
IC40-1 (±14A)
IC42-1 (±14A)
IC44-1 (±14A)
IC41 Expander
IC43 Expander
IC45 Expander
IC40-2 (±14A)
IC42-2 (±14A)
IC44-2 (±14A)
TREMOLO MODULATION CIRCUIT
BBD Bias
VR3 22KB
Phase Inverter
IC38-2 (±14A)
Integrator
IC46-1 (±15A)
IC46-2 (±15A)
Buffer
Q14
Q13
Clock Generator
IC50
IC51
BBD (128-stages)
IC52
IC53
Low-Pass Filter
IC49-1 (±14A)
IC49-2 (±14A)
IC54 (±15A)
IC55 (±15A)
VCA
IC56


10
11
12
13
14
15
16
17
18
19
Reverb Noise Reduction IC30
IC41 Expander
IC43 Expander
IC45 Expander
IC40-2 (±14A)
IC42-2 (±14A)
IC44-2 (±14A)
IC38-2 (±14A)
IC49-1 (±14A)
IC49-2 (±14A)
IC54 (±15A)
IC55 (±15A)
VCA
Noise Reduction IC56
Noise Reduction IC57
Mixing
IC60-2 (±15A)
IC60-1 (±15A)
IC61-2 (±15A)
IC61-1 (±15A)
Noise Reduction IC58
Noise Reduction IC59
Low-Pass Filter
(DRUMS, BGS R CH)
(DRUMS, BGS L CH)
IC62-1 (±15A)
IC62-2 (±15A)
IC47-1 (±15A)
Integrator
IC47-2 (±15A)
IC14-2 (±15A)
(BASS)
AUX Amplifier
IC76-1 (±15A)
IC76-2 (±15A)
AUX Detector
IC77-1 (±15A)
IC63-2 (±15A)
IC63-1 (±15A)
IC64-1 (±15A)
IC64-2 (±15A)
IC65-2 (±15A)
IC65-1 (±15A)
IC66-2 (±15A)
IC66-1 (±15A)
IC67-1 (±15A)
IC67-2 (±15A)
IC68-2 (±15A)
IC68-1 (±15A)
IC69-1 (±15M)
IC70-1 (±15M)
IC71-1 (±15M)
IC73-1 (±15M)
IC74-1 (±15M)
IC75-1 (±15M)
IC73-2 (±15M)
IC74-2 (±15M)
IC75-2 (±15M)
IC69-2 (±15M)
IC71-2 (±15M)
IC72-2 (±15M)
IC70-2 (±15M)
Phase Inverter
HEADPHONE AMPLIFIER
Muting Control Circuit
CN1 DRV
CN1 PA
CN4 PA
CN1 JACK
CN1 PS
CN13 MAIN
CN3 DRV
CN3 SG
CN5
CN6
CN7
CN8
CN9
CN11
AUX IN
LINE OUT
MAIN MIX
SEPARATED LINE OUT
BASS
DRUMS
EXP
DIRECT
2CH
3CH
OFF
ON
M
EZ
area

NOTES:

- IC'S

IC1~4, 78:	MN40174B
IC5~11, 13:	SVIGTC4052BP
IC12:	SVIGTC4053BP
IC14~19, 22, 26~29, 38, 40, 42, 44, 46, 47, 49, 60~62, 66~77:	SVIGM5218L
IC20, 23, 37, 41, 43, 45:	SVIGUPC1252H
IC21, 39:	SVIGUPC1253H
IC24, 31~33, 50, 51:	SVIGMSM4011
IC25, 34~36:	MN3004
IC30, 56~59:	SVIGLM1894N
IC52, 53:	MN3006
IC54, 55:	SVIGBA6110
IC63~65:	SVIGM5241L

- TRANSISTORS

Q1~3, 15~23, 42:	2SJ105GR
Q4, 6~14, 28, 29, 36~39:	2SC2320LFG
Q5, 26, 27, 35, 40, 41:	2SA1015-GR
Q30, 31:	2SC3940ARS
Q32, 33:	2SA1534ARS

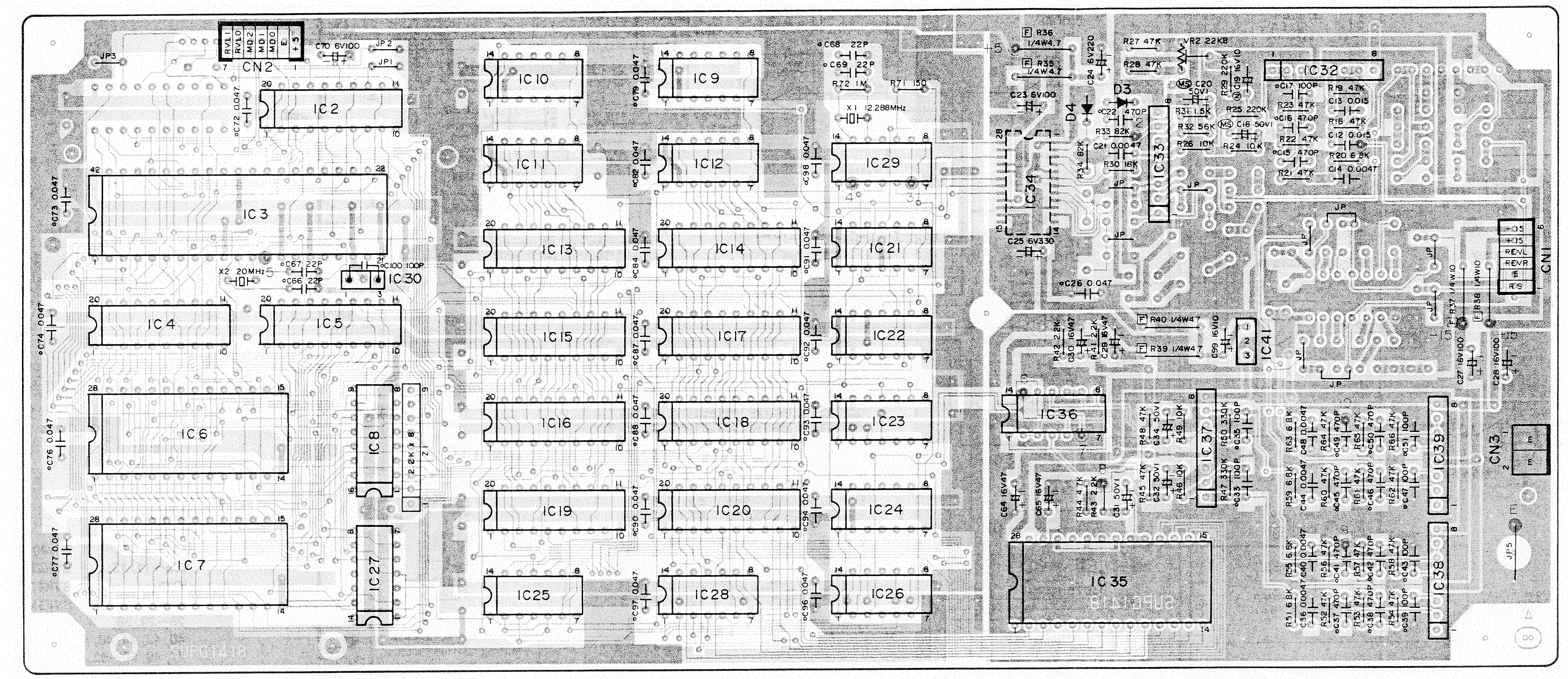
- DIODES

D1~21, 24:	MA165TA5
D23:	MA4062
D24:	SVDGRK14

DIGITAL REVERB CIRCUIT BOARD

Circuit view on top of P.C.B.

SXPG141811


CN2
CN1
CN3
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
IC28
IC29
IC30
IC32
IC33
IC34
IC35
IC36
IC37
IC38
IC39
IC41
D3
D4
X1 12.288MHz
X2 20MHz
JP1
JP2
JP3

NOTES:

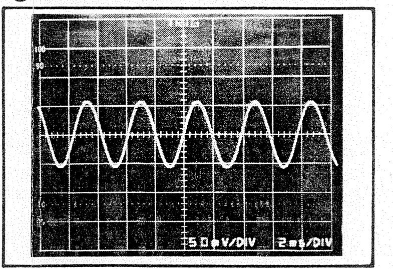
- IC'S

IC2:	SVIGM74HC244
IC3:	SVIG87064071
IC4, 5, 13～20:	SVIGM74HC374
IC6, 7:	SVIGHM65256
IC8:	SVIGM74HC138
IC9～12, 24:	SVIGM74H164
IC21～23:	SVIGM74H74
IC25, 27:	SVIGM74H32
IC26:	SVIGM74H08
IC28, 29:	SVIGM74H04
IC30:	MN1280R
IC32, 37～39:	SVIGM5218L
IC33:	SVIGM5220L
IC34:	MN8305S
IC35:	SVIGPCM54
IC36:	SVIGM74H4066
IC41:	SVIGM5278L05

- DIODES

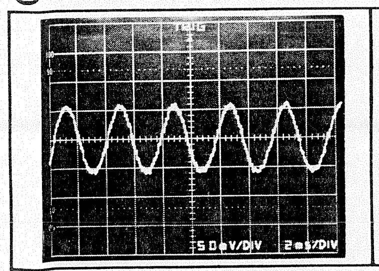
D3, 4:	MA165TA5

❶



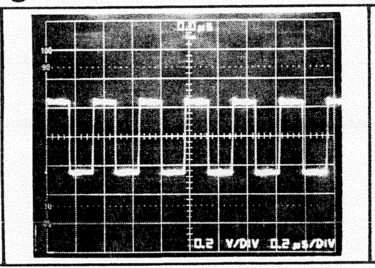
- U. Tab...Flute 16′ • Upper Key...C4
- Tab Volume........................Max.
- Reverb Mode......................HALE 3
- Depth ....Step 3

❷

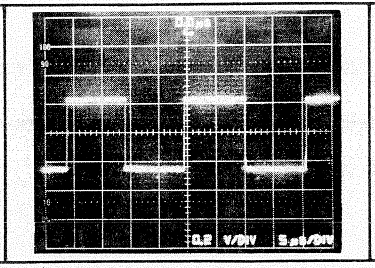


- U. Tab...Flute 16′ • Upper Key...C4
- Tab Volume........................Max.
- Reverb Mode......................HALE 3
- Depth ....Step 3

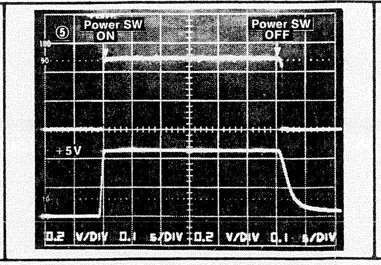
❸



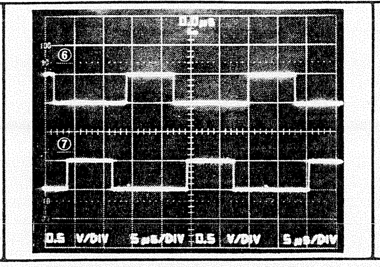
❹



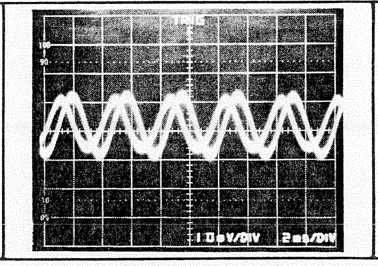
❺, +5V



❻, ❼

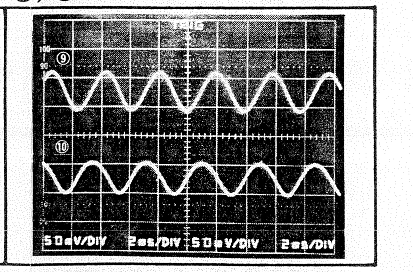


❽

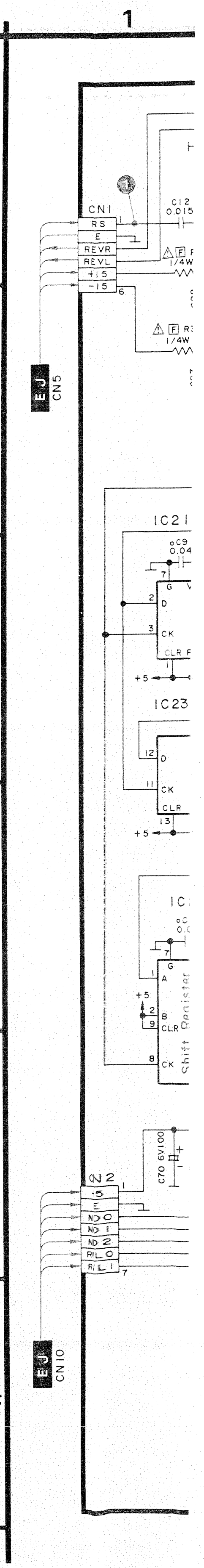


- U. Tab...Flute 16′ • Upper Key...C4
- Tab Volume........................Max.
- Reverb Mode......................HALE 3
- Depth ....Step 3

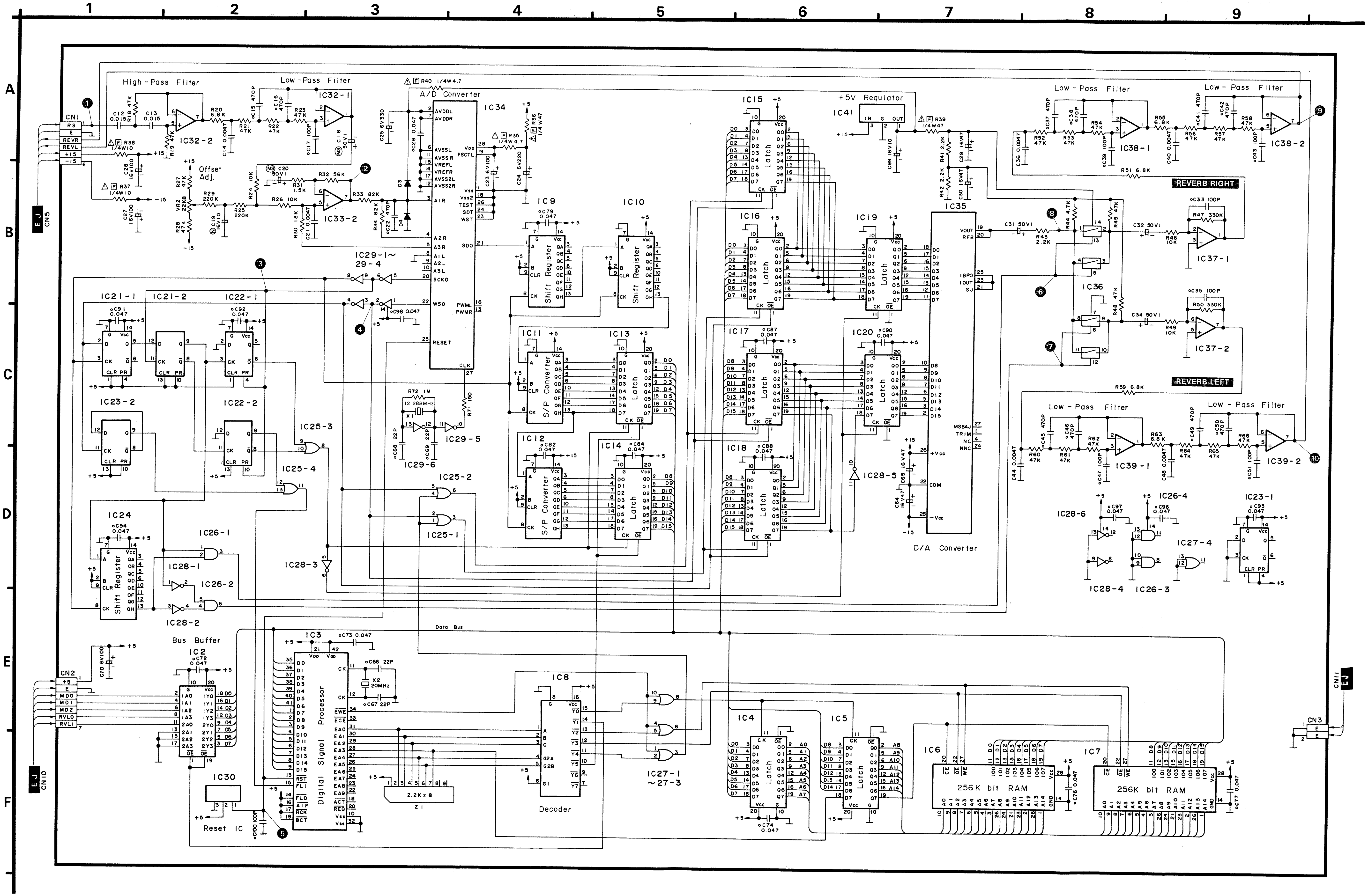
❾, ❿



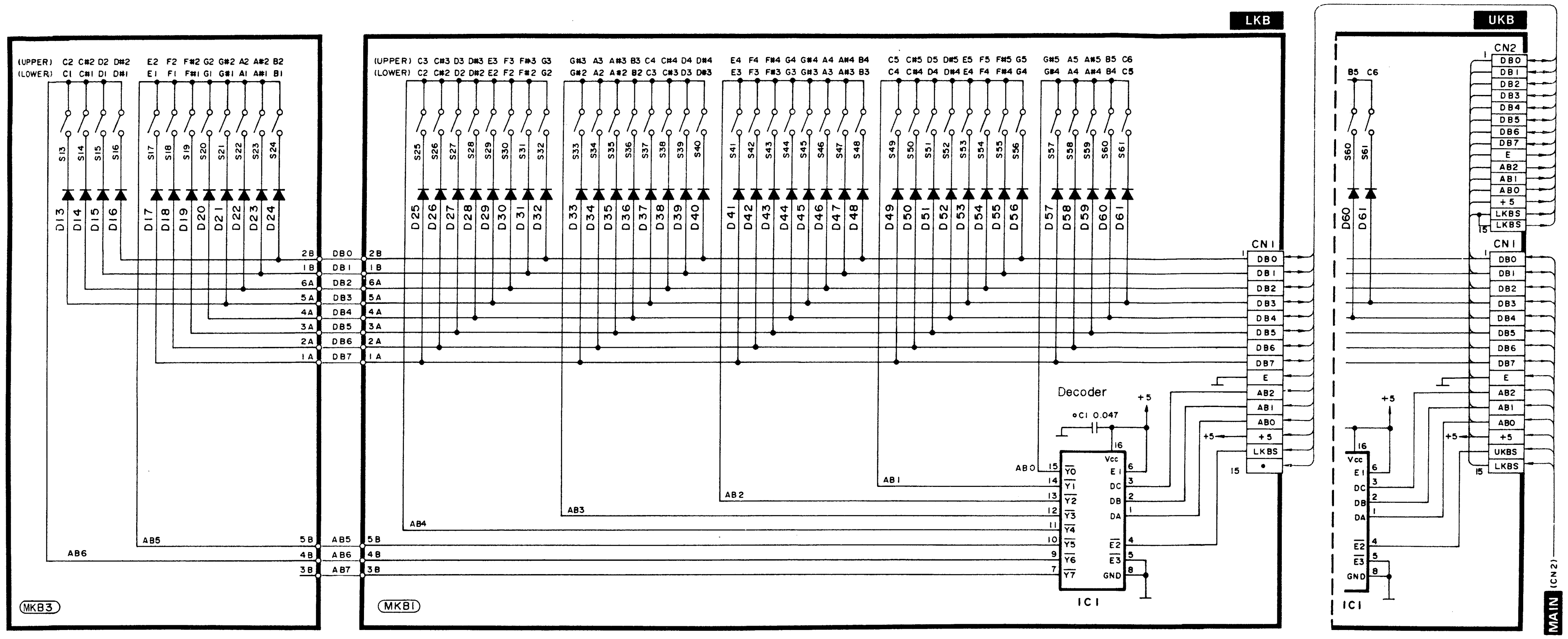
- U. Tab...Flute 16′ • Upper Key...C4
- Tab Volume........................Max.
- Reverb Mode......................HALE 3
- Depth ....Step 3


CN1
CN5
CN10
IC21
IC23
C70 6V100

DRV DIGITAL REVERB CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
High-Pass Filter
Low-Pass Filter
A/D Converter
IC34
IC32-1
IC32-2
IC33-2
Offset Adj.
CN1
RS
E
REVR
REVL
+15
-15
EJ CN5
IC15
IC16
IC17
IC18
IC19
IC20
Latch
+5V Regulator
IC41
IN G OUT
IC35
D/A Converter
Low-Pass Filter
IC38-1
IC38-2
REVERB RIGHT
REVERB LEFT
IC36
IC37-1
IC37-2
IC39-1
IC39-2
IC9
IC10
Shift Register
IC11
IC12
IC13
IC14
S/P Converter
IC21-1
IC21-2
IC22-1
IC22-2
IC23-2
IC23-1
IC24
IC25-1
IC25-2
IC25-3
IC25-4
IC26-1
IC26-2
IC26-3
IC26-4
IC27-4
IC28-1
IC28-2
IC28-3
IC28-4
IC28-5
IC28-6
IC29-1~29-4
IC29-5
IC29-6
12.288MHz
X1
Data Bus
Bus Buffer
IC2
CN2
MD0
MD1
MD2
RVL0
RVL1
EJ CN10
IC3
Digital Signal Processor
X2 20MHz
IC30
Reset IC
IC8
Decoder
IC27-1 ~27-3
IC4
IC5
IC6
IC7
256K bit RAM
2.2K x 8
Z1
CN3
CN11 EJ

MKB MANUAL KEYBOARD CIRCUIT DIAGRAM


LKB
UKB
(UPPER)
(LOWER)
S13–S61
D13–D61
CN1
CN2
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
E
AB2
AB1
AB0
+5
LKBS
UKBS
Decoder
C1 0.047
IC1
Vcc
GND
AB0
AB1
AB2
AB3
AB4
AB5
AB6
AB7
MKB3
MKB1
MAIN (CN2)

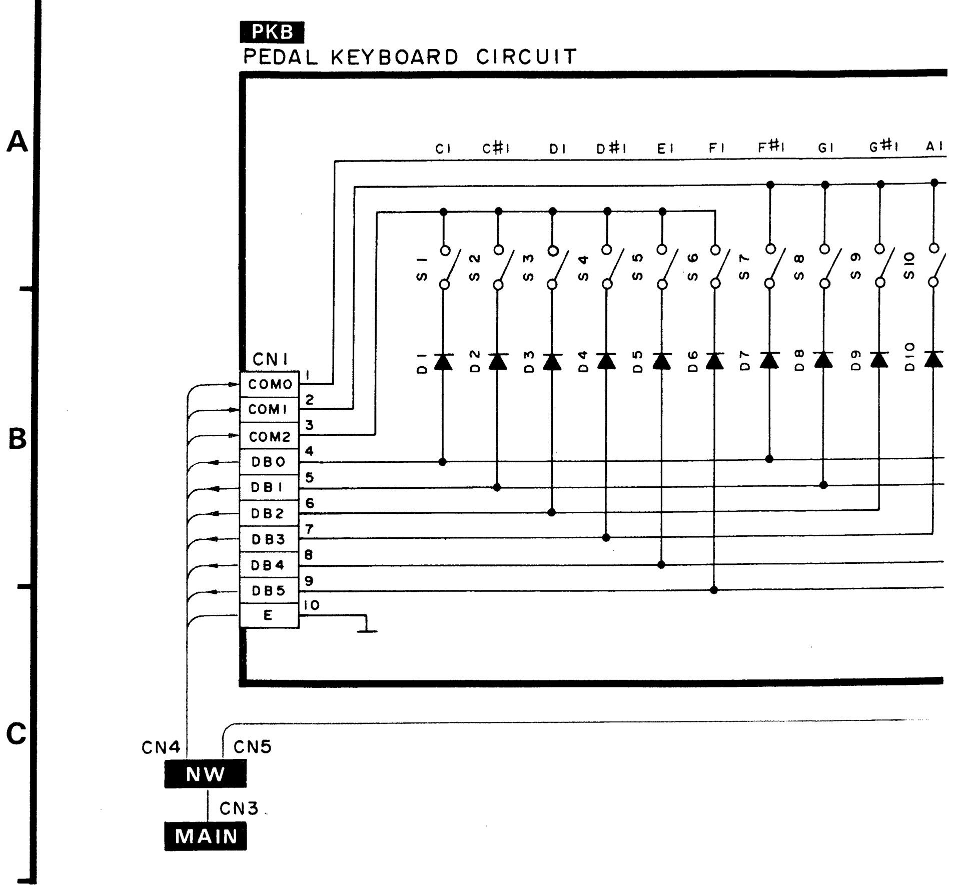
MKB3

NOTES:
- DIODES
  D13~24: MA162A

MKB1

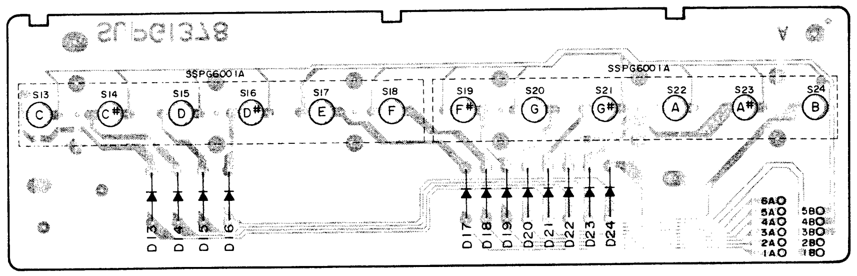
NOTES:
- IC
  IC1: SVIGM74LS138
- DIODES
  D25~61: MA162A

PKB PEDAL KEYBOARD CIRCUIT D

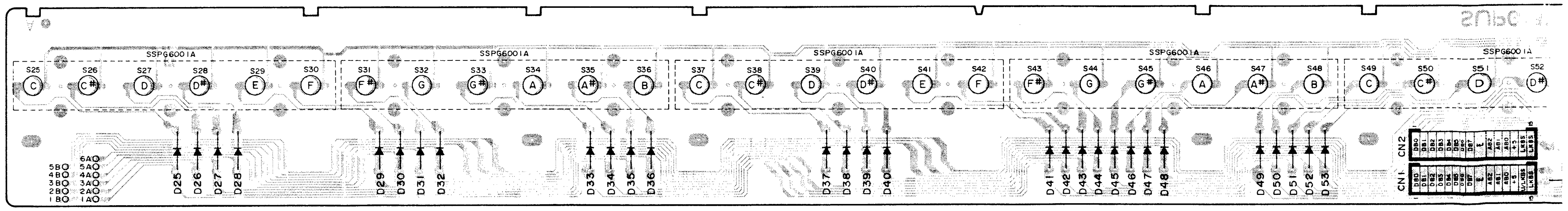

PKB
PEDAL KEYBOARD CIRCUIT
C1
C#1
D1
D#1
E1
F1
F#1
G1
G#1
A1
S1–S10
D1–D10
CN1
COM0
COM1
COM2
DB0
DB1
DB2
DB3
DB4
DB5
E
CN4
CN5
NW
CN3
MAIN

MKB MANUAL KEYBOARD CIRCUIT BOARD

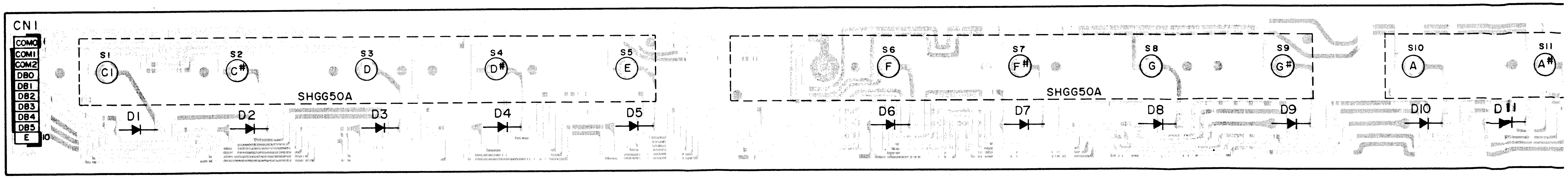
MKB3 **MANUAL KEYBOARD 3** **SXPG137811**

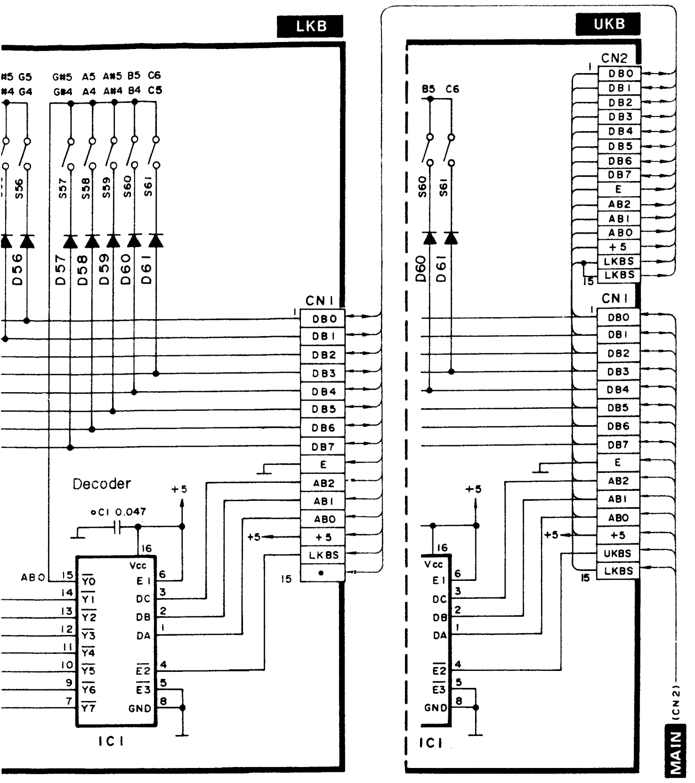

SSPG6001A
S13
S14
S15
S16
S17
S18
S19
S20
S21
S22
S23
S24
C
C#
D
D#
E
F
F#
G
G#
A
A#
B
D13
D14
D15
D16
D17
D18
D19
D20
D21
D22
D23
D24
6A
5A
4A
3A
2A
1A
5B
4B
3B
2B
1B

MKB1 **MANUAL KEYBOARD 1 CIRCUIT BOARD**


SSPG6001A
S25–S52
D25–D53
5B
4B
3B
2B
1B
5A
4A
3A
2A
1A
CN1
CN2

PKB PEDAL KEYBOARD CIRCUIT BOARD


CN1
COM0
COM1
COM2
DB0
DB1
DB2
DB3
DB4
DB5
E
10
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
C1
C#
D
D#
E
F
F#
G
G#
A
A#
SHGG50A
SHGG50A
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11


LKB
UKB
CN1
CN2
Decoder
IC1
MAIN
CN21

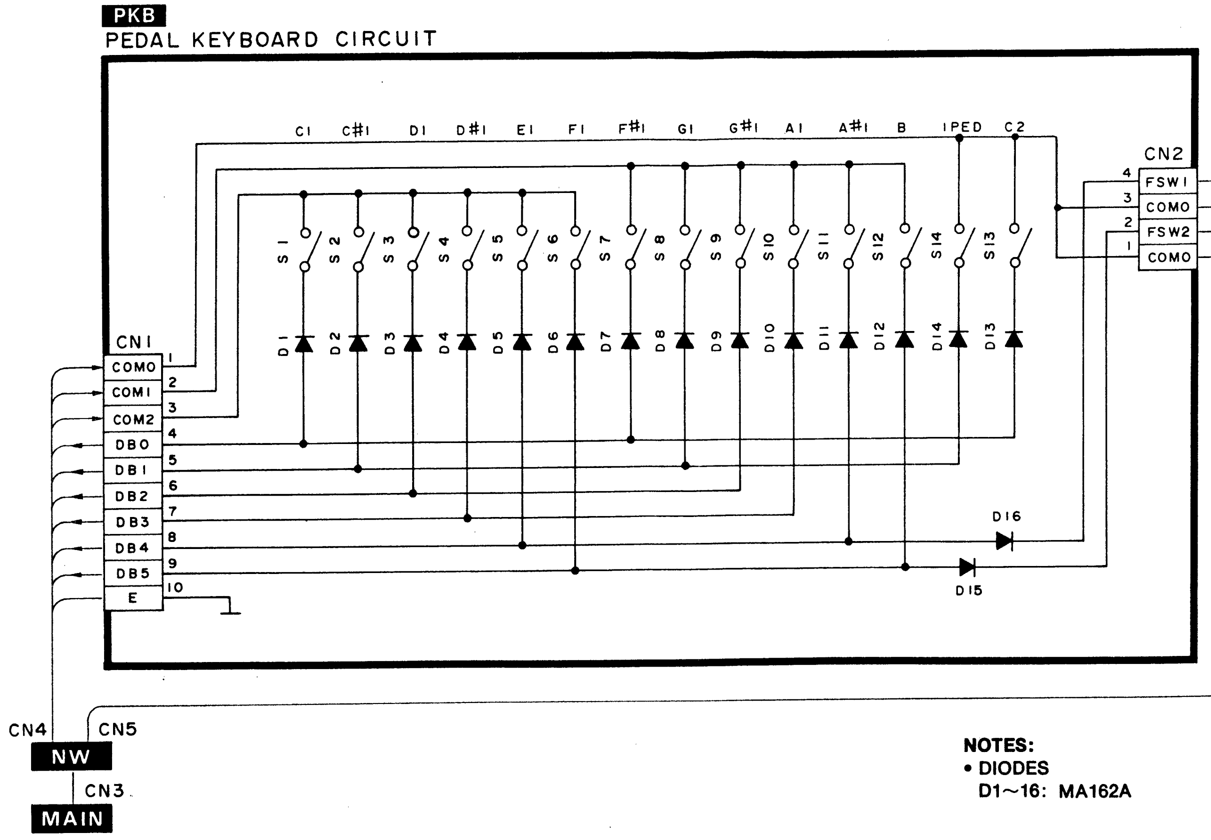
MKB3

NOTES:
- DIODES
  D13~24: MA162A

MKB1

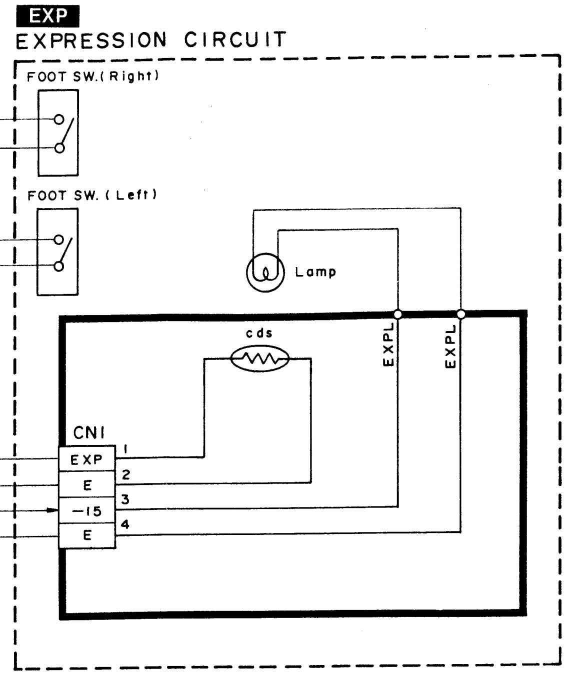
NOTES:
- IC
  IC1: SVIGM74LS138
- DIODES
  D25~61: MA162A

PKB PEDAL KEYBOARD CIRCUIT DIAGRAM

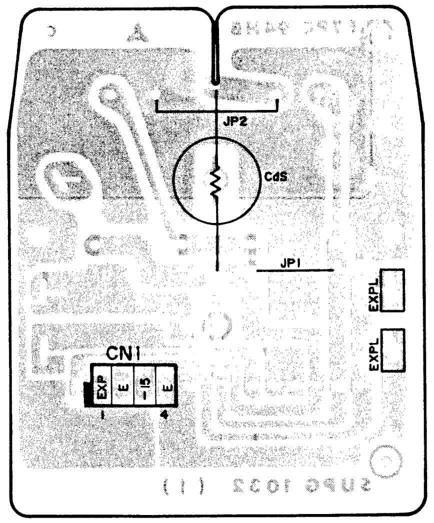

PKB
PEDAL KEYBOARD CIRCUIT
C1 C#1 D1 D#1 E1 F1 F#1 G1 G#1 A1 A#1 B IPED C2
CN1
COMO
COM1
COM2
DB0
DB1
DB2
DB3
DB4
DB5
E
CN2
FSW1
COMO
FSW2
COMO
D15
D16
CN4
CN5
NW
CN3
MAIN

NOTES:
- DIODES
  D1~16: MA162A

EXP EXP CIRCUIT

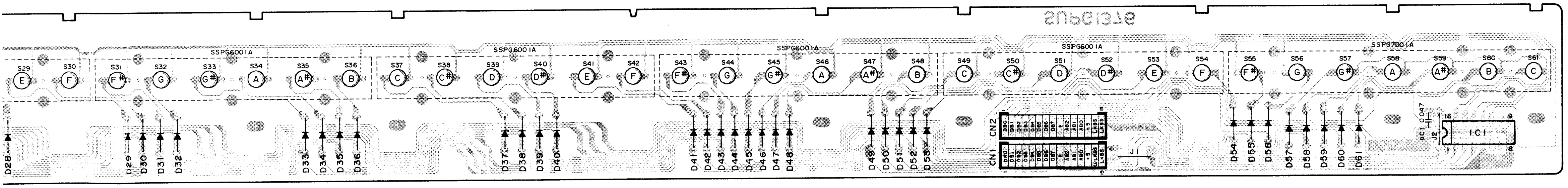

EXP
EXPRESSION CIRCUIT
FOOT SW.(Right)
FOOT SW.(Left)
Lamp
cds
EXPL
EXPL
CN1
EXP
E
-15
E

EXP P.C.B. SXPG103211

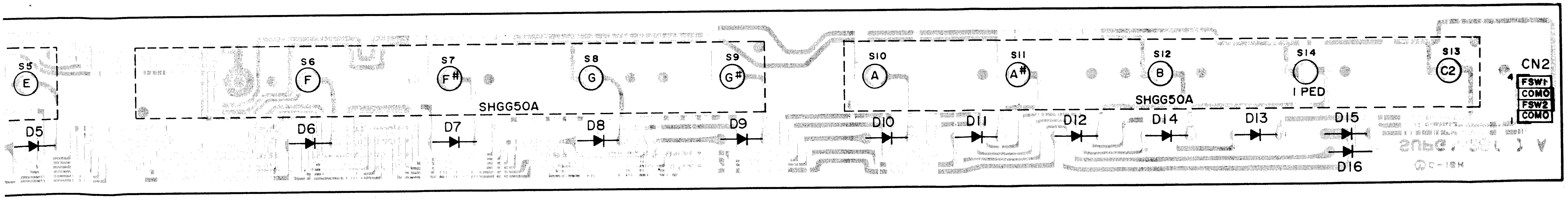

JP2
CdS
JP1
CN1
EXP
E
-15
E
EXPL
EXPL

KEYBOARD 1 CIRCUIT BOARD

SXPG137611


SSPG6001A
SSPG7001A
S29 S30 S31 S32 S33 S34 S35 S36 S37 S38 S39 S40 S41 S42 S43 S44 S45 S46 S47 S48 S49 S50 S51 S52 S53 S54 S56 S56 S57 S58 S59 S60 S61
CN2
CN1
IC1
J1
D28 D29 D30 D31 D32 D33 D34 D35 D36 D37 D38 D39 D40 D41 D42 D43 D44 D45 D46 D47 D48 D49 D50 D51 D52 D53 D54 D55 D56 D57 D58 D59 D60 D61

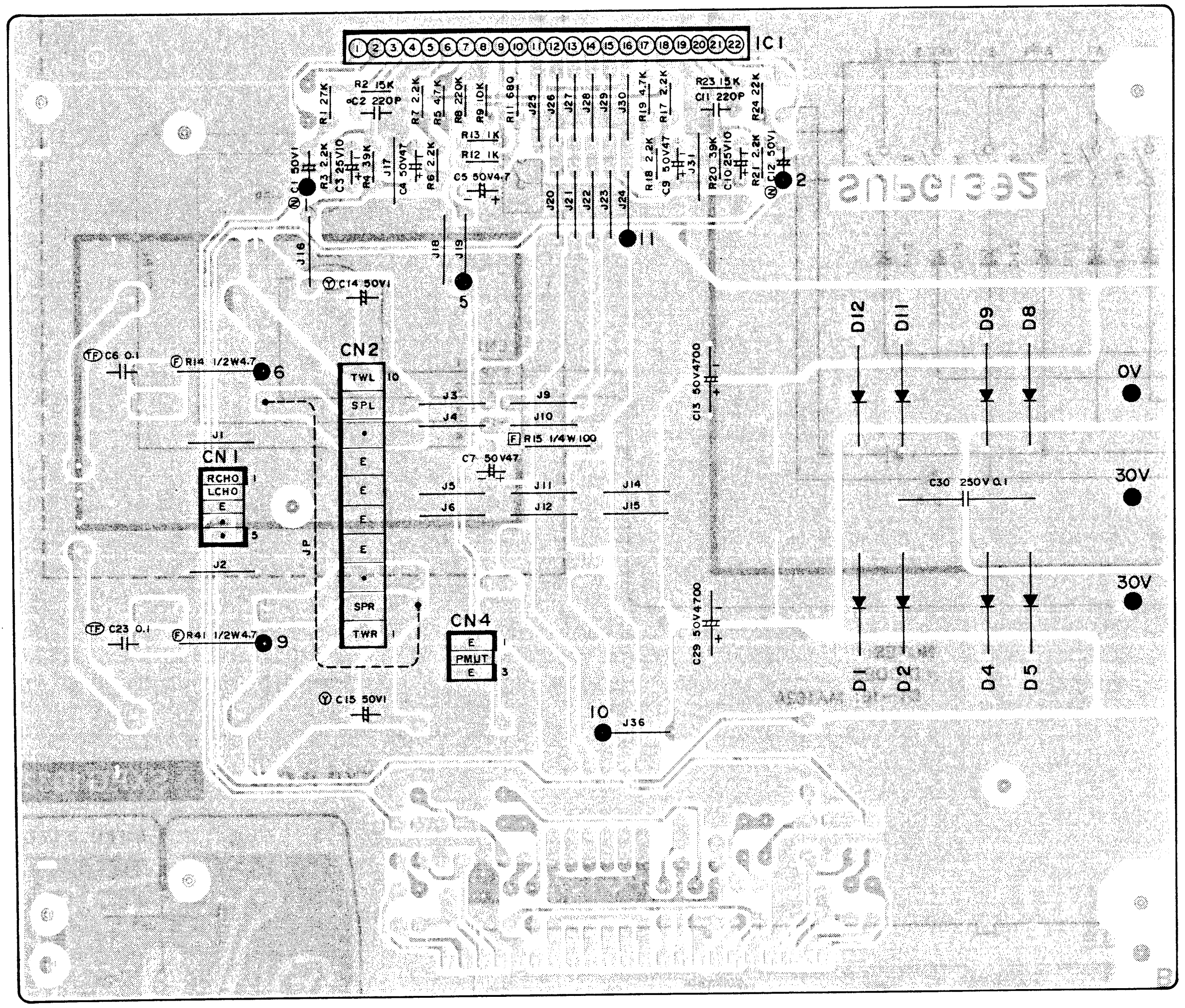
SXPG142811


S5 S6 S7 S8 S9 S10 S11 S12 S14 S13
E F F# G G# A A# B I PED C2
SHGG50A
SHGG50A
CN2
FSW1
COMO
FSW2
COMO
D5 D6 D7 D8 D9 D10 D11 D12 D14 D13 D15 D16

ACP PS PA NW AC POWER SUPPLY, POWER AMPLIFIER, NETWORK CIRCUIT BOARD

PA POWER AMPLIFIER CIRCUIT BOARD

SXPG139241


IC1
CN1
RCHO
LCHO
E
CN2
TWL
SPL
SPR
TWR
CN4
PMUT
D12
D11
D9
D8
D1
D2
D4
D5
0V
30V
30V
C30 250V0.1
C13 50V4700
C29 50V4700
R14 1/2W4.7
R41 1/2W4.7
R15 1/4W100
C6 0.1
C23 0.1
C14 50V1
C15 50V1
C7 50V47
1
2
5
6
9
10
11

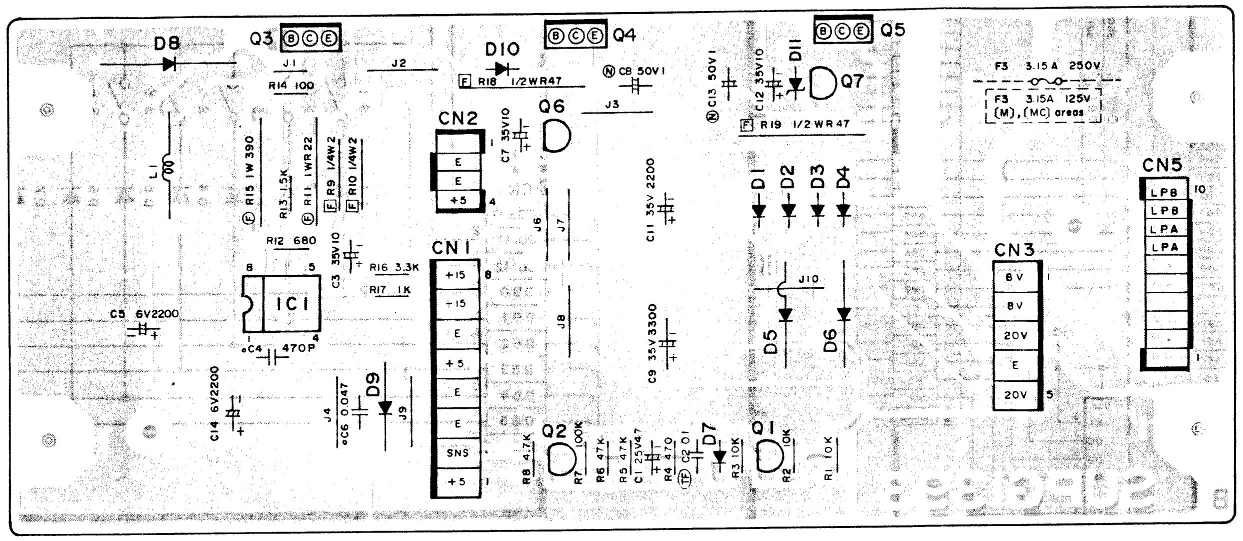
PA

NOTES:

- IC'S
  - IC1: SVIGS4221M2M
- DIODES
  - D1, 2, 4, 5, 8, 9, 11, 12: SVDS3V20

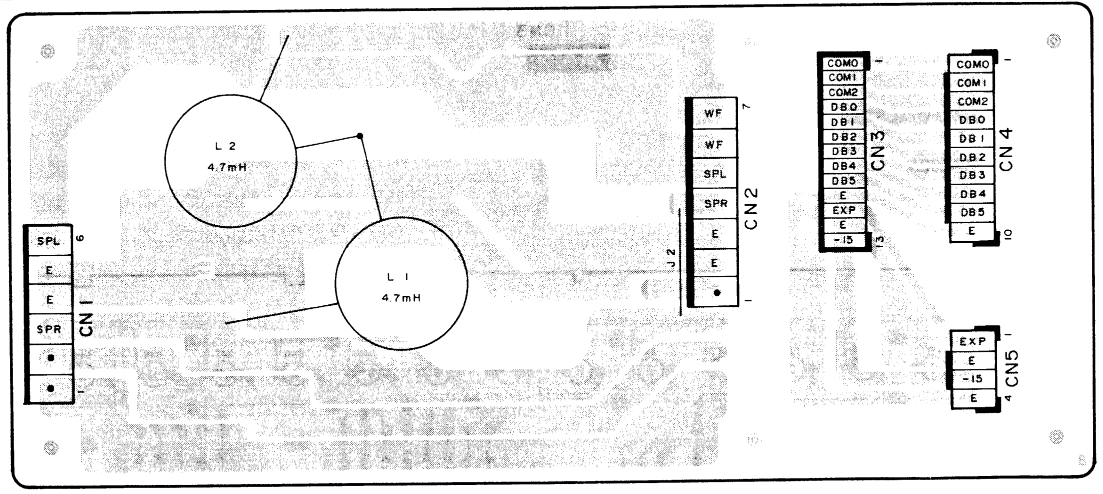
PS POWER SUPPLY CIRCUIT BOARD

- Products for [M] [MC] areas SXPG139351
- Except for [M] [MC] areas SXPG139341


D8
Q3
D10
Q4
Q5
Q6
Q7
D11
CN2
E
E
+5
CN1
+15
-15
E
+5
E
E
SNS
+5
IC1
CN3
8V
8V
20V
E
20V
CN5
LPB
LPB
LPA
LPA
D1
D2
D3
D4
D5
D6
D7
D9
Q1
Q2
L1
F3 3.15A 250V
F3 3.15A 125V [M], [MC] areas
C5 6V2200
C14 6V2200
C11 35V2200
C9 35V3300
R18 1/2WR47
R19 1/2WR47

NW NETWORK CIRCUIT BOARD

SXPG140521E


L2
4.7mH
L1
4.7mH
CN1
SPL
E
E
SPR
CN2
WF
WF
SPL
SPR
E
E
J2
CN3
COMO
COM1
COM2
DB0
DB1
DB2
DB3
DB4
DB5
E
EXP
E
-15
CN4
COMO
COM1
COM2
DB0
DB1
DB2
DB3
DB4
DB5
E
CN5
EXP
E
-15
E

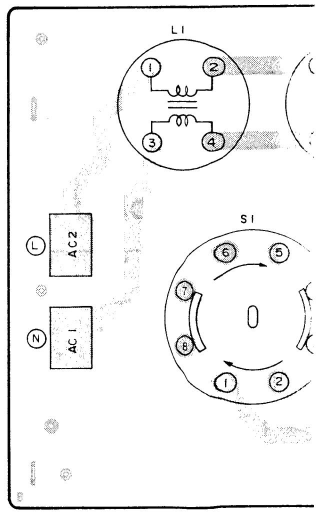
PS

NOTES:

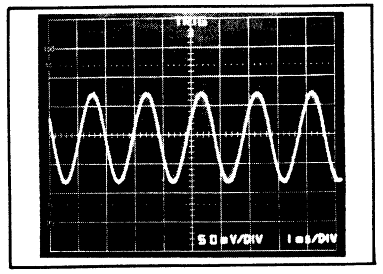
- IC'S
  - IC1: SVIGM5
- TRANSISTORS
  - Q1, 2: 2SC232
  - Q3: 2SB953
  - Q4: 2SD127
  - Q5: 2SB951
  - Q6, 7: 2SJ105
- DIODES
  - D1~4: SVDGE
  - D5, 6: SVDS2V
  - D7: MA165T
  - D8: SVDGE
  - D9: MA2062
  - D10, 11: MA416
- FUSES
  - F3 **M** **MC**: XBA1C
  - F5: XBA2C

ACP AC POWER S

- Products for [EK] [XS] [XL

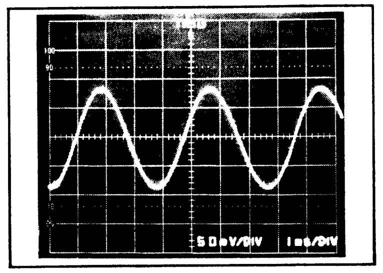

L1
S1
L
N
AC2
AC1

❶ LCHO



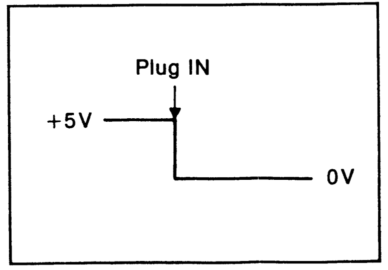
- Lower Tab ....Flute 8′
- Lower Key C4
- Tab Vol, Main Vol..............Max.
- Expression ....Max.

❷ RCHO



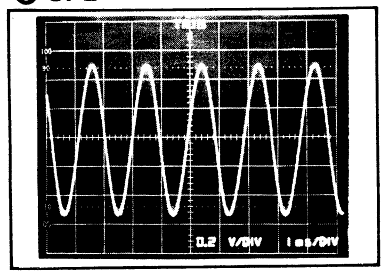
- Upper Tab...........................Flute 16′
- Upper Key...........................C4
- Tab Vol, Main Vol..............Max.
- Expression ....Max.

❺ HP IN



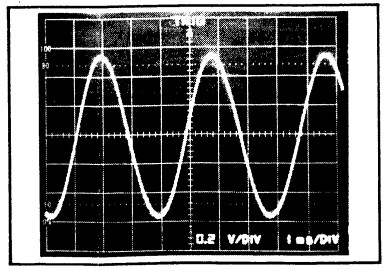
- HP Plug...............................IN

❻ SPL



- Lower Tab ....Flute 8′
- Lower Key C4
- Poly Vol, Main Vol..............Max.
- Expression ....Max.

❾ SPR



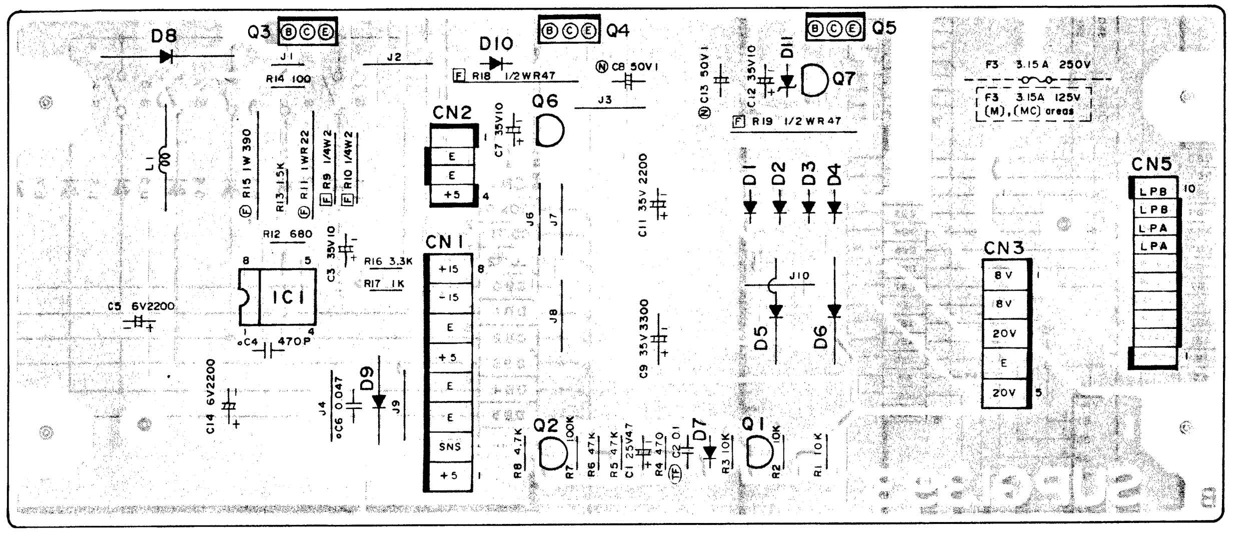
- Upper Tab...........................Flute 16′
- Upper Key...........................C4
- Tab Vol, Main Vol..............Max.
- Expression ....Max.

SUPPLY, POWER AMPLIFIER, NETWORK CIRCUIT BOARD

5 6 7 8 9 10 11 12 13 14

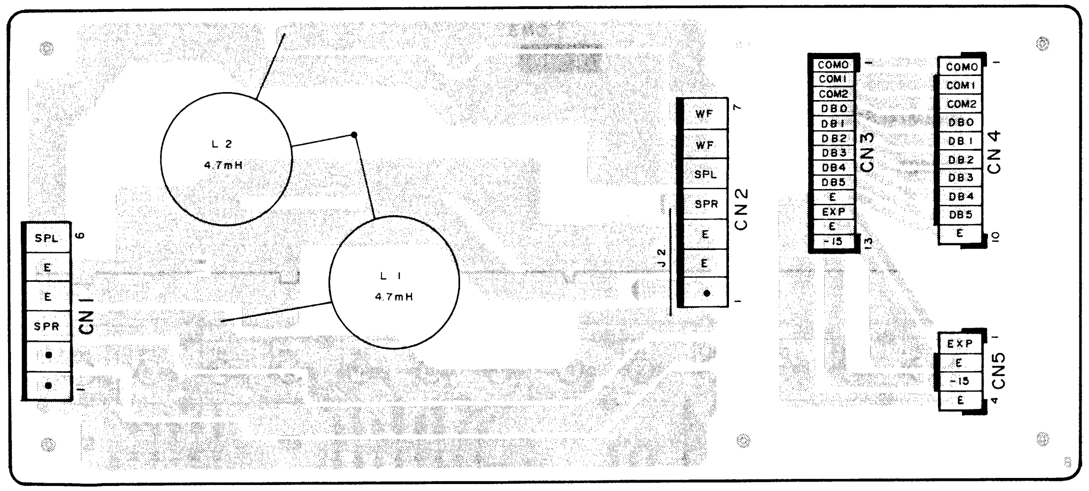
PS POWER SUPPLY CIRCUIT BOARD

- Products for [M] [MC] areas **SXPG139351**
- Except for [M] [MC] areas **SXPG139341**

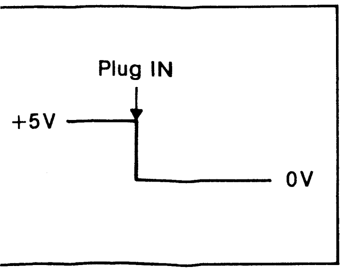

D8
Q3
J1
R14 100
J2
D10
R18 1/2WR47
Q4
C8 50V1
J3
C13 50V1
C12 35V10
D11
Q7
Q5
R19 1/2WR47
F3 3.15A 250V
F3 3.15A 125V (M),(MC) areas
L1
R15 1W 390
R13 1.5K
R11 1WR22
R9 1/4W2
R10 1/4W2
CN2
E
E
+5
C7 35V10
Q6
J6
J7
C11 35V 2200
D1 D2 D3 D4
CN5
LPB
LPB
LPA
LPA
R12 680
C3 35V10
R16 3.3K
R17 1K
CN1
+15
-15
E
+5
E
E
SNS
+5
IC1
C5 6V2200
C4 470P
C14 6V2200
J4
C6 0.047
D9
J8
C9 35V 3300
J10
D5
D6
CN3
8V
8V
20V
E
20V
Q2
R8 4.7K
R7 10K
R6 47K
R5 47K
C1 25V47
R4 470
C2 0.1
D7
R3 10K
Q1
R2 10K
R1 10K

NW NETWORK CIRCUIT BOARD

SXPG140521E

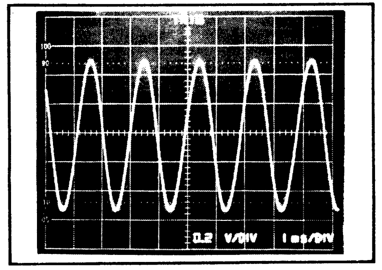

L2
4.7mH
L1
4.7mH
CN1
SPL
E
E
SPR
J2
CN2
WF
WF
SPL
SPR
E
E
CN3
COM0
COM1
COM2
DB0
DB1
DB2
DB3
DB4
DB5
E
EXP
E
-15
CN4
COM0
COM1
COM2
DB0
DB1
DB2
DB3
DB4
DB5
E
CN5
EXP
E
-15
E

HP IN



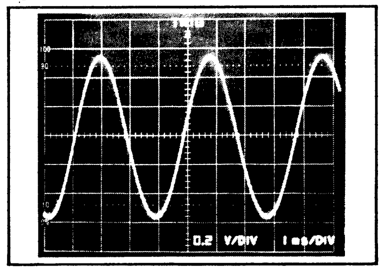
- HP Plug..............................IN

❻ SPL



- Lower Tab ....Flute 8'
- Lower Key C4
- Poly Vol, Main Vol..............Max.
- Expression ....Max.

❾ SPR



- Upper Tab..............................Flute 16'
- Upper Key..............................C4
- Tab Vol, Main Vol..............Max.
- Expression ....Max.

PS

NOTES:

- IC'S

IC1:	SVIGM5291P

- TRANSISTORS

Q1, 2:	2SC2320LFG
Q3:	2SB953AQP
Q4:	2SD1277A
Q5:	2SB951A
Q6, 7:	2SJ105GR

- DIODES

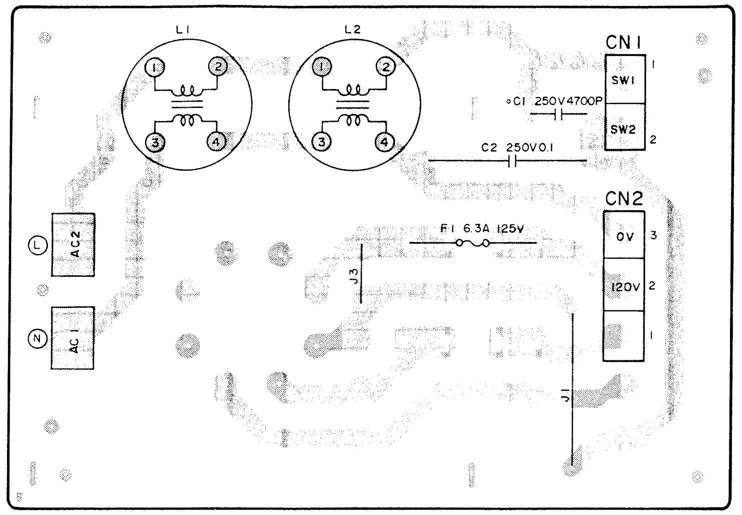
D1~4:	SVDGERA1502Y
D5, 6:	SVDS2V20
D7:	MA165TA5
D8:	SVDGERC9102
D9:	MA2062LF
D10, 11:	MA4160

- FUSES

F3 **M** **MC**:	XBA1C31N1U100
F5:	XBA2C31TB0

ACP AC POWER SUPPLY CIRCUIT BOARD

- Products for [M] [MC] areas **SXPG140921**

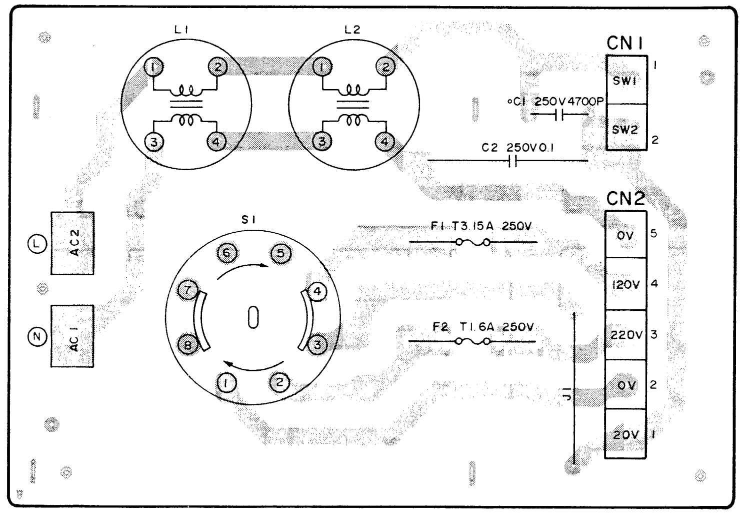

L1
L2
CN1
SW1
SW2
C1 250V4700P
C2 250V0.1
CN2
0V
120V
F1 6.3A 125V
AC2
AC1
L
N
J3
J1

NOTE:
- FUSE

F1:	XBA1C63NU100

ACP AC POWER SUPPLY CIRCUIT BOARD

- Products for [EK] [XS] [XL] [XR] [X] areas **SXPG140931**

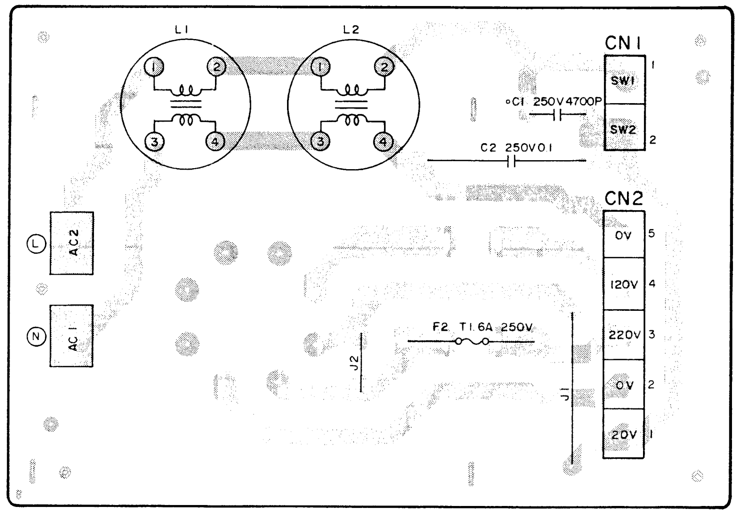

L1
L2
CN1
SW1
SW2
C1 250V4700P
C2 250V0.1
CN2
S1
F1 T3.15A 250V
F2 T1.6A 250V
0V
120V
220V
0V
20V
AC2
AC1
L
N
J1

NOTES:
- FUSES

F1:	XBA2C31TB0
F2:	XBA2C16TB0

ACP AC POWER SUPPLY CIRCUIT BOARD

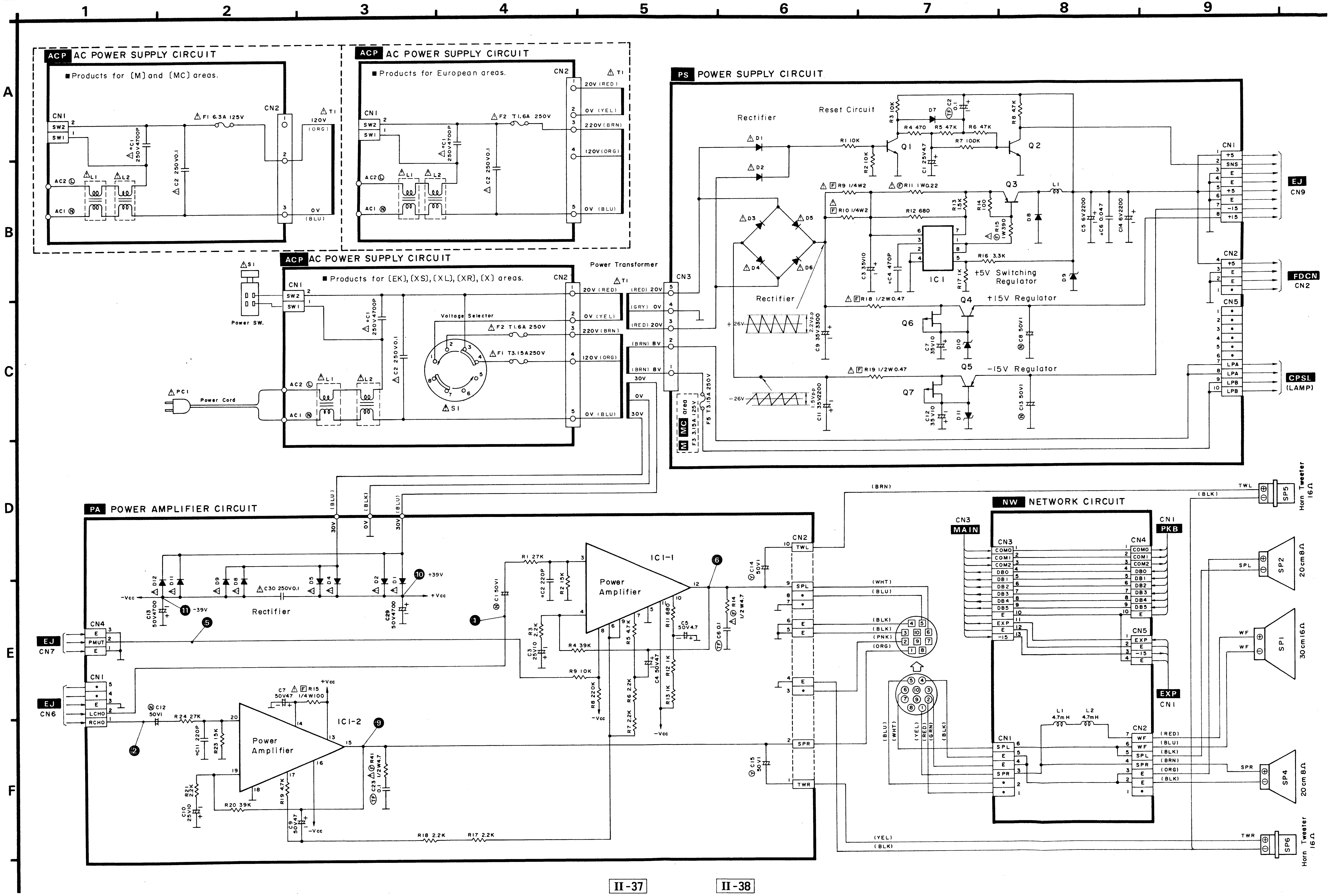
- Products for European areas **SXPG140911**


L1
L2
CN1
SW1
SW2
C1 250V4700P
C2 250V0.1
CN2
F2 T1.6A 250V
0V
120V
220V
0V
20V
AC2
AC1
L
N
J2
J1

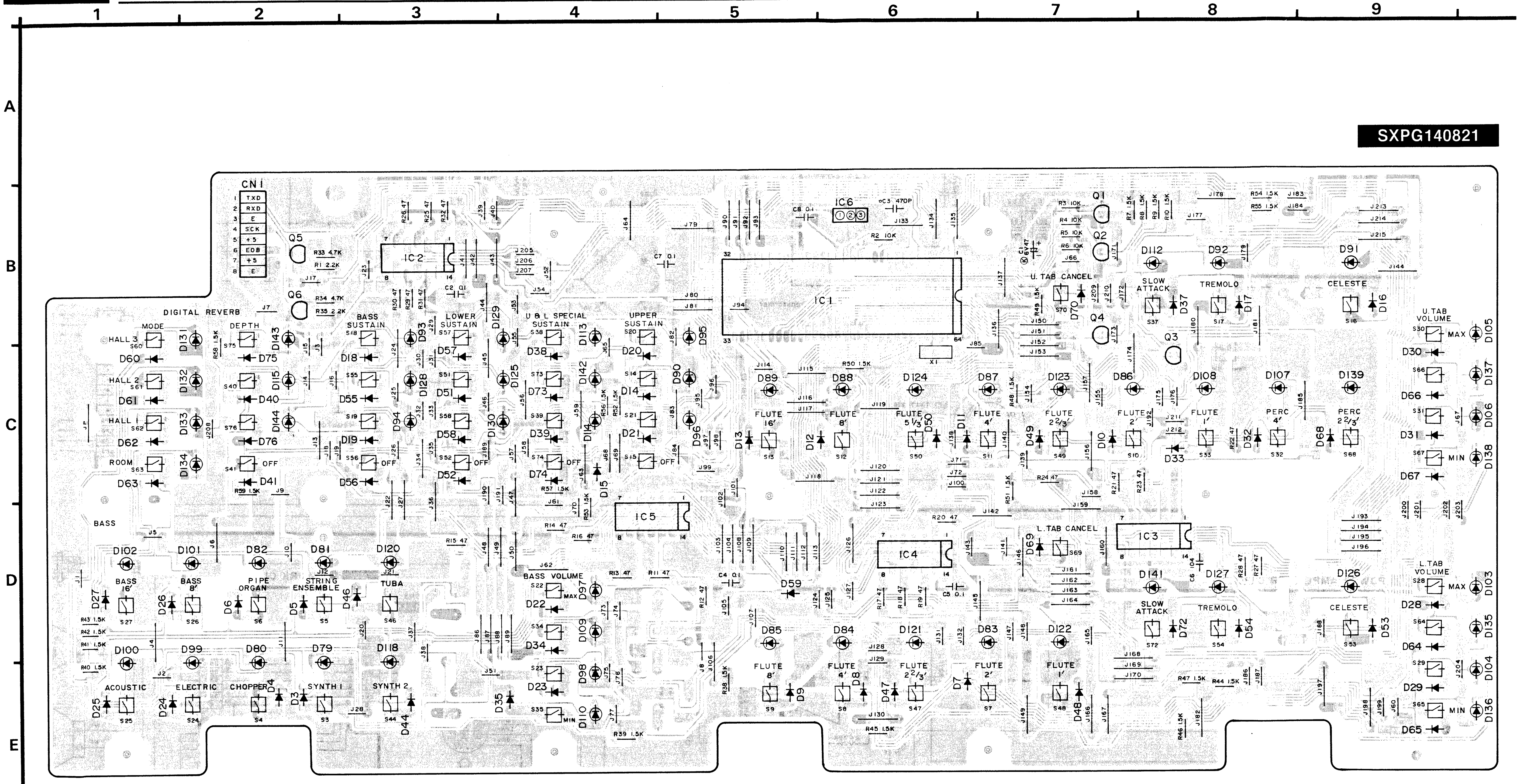
NOTE:
- FUSE

F2:	XBA2C16TB0

ACP PS PA NW AC POWER SUPPLY, POWER SUPPLY, POWER AMPLIFIER, NETWORK CIRCUIT DIAGRAM

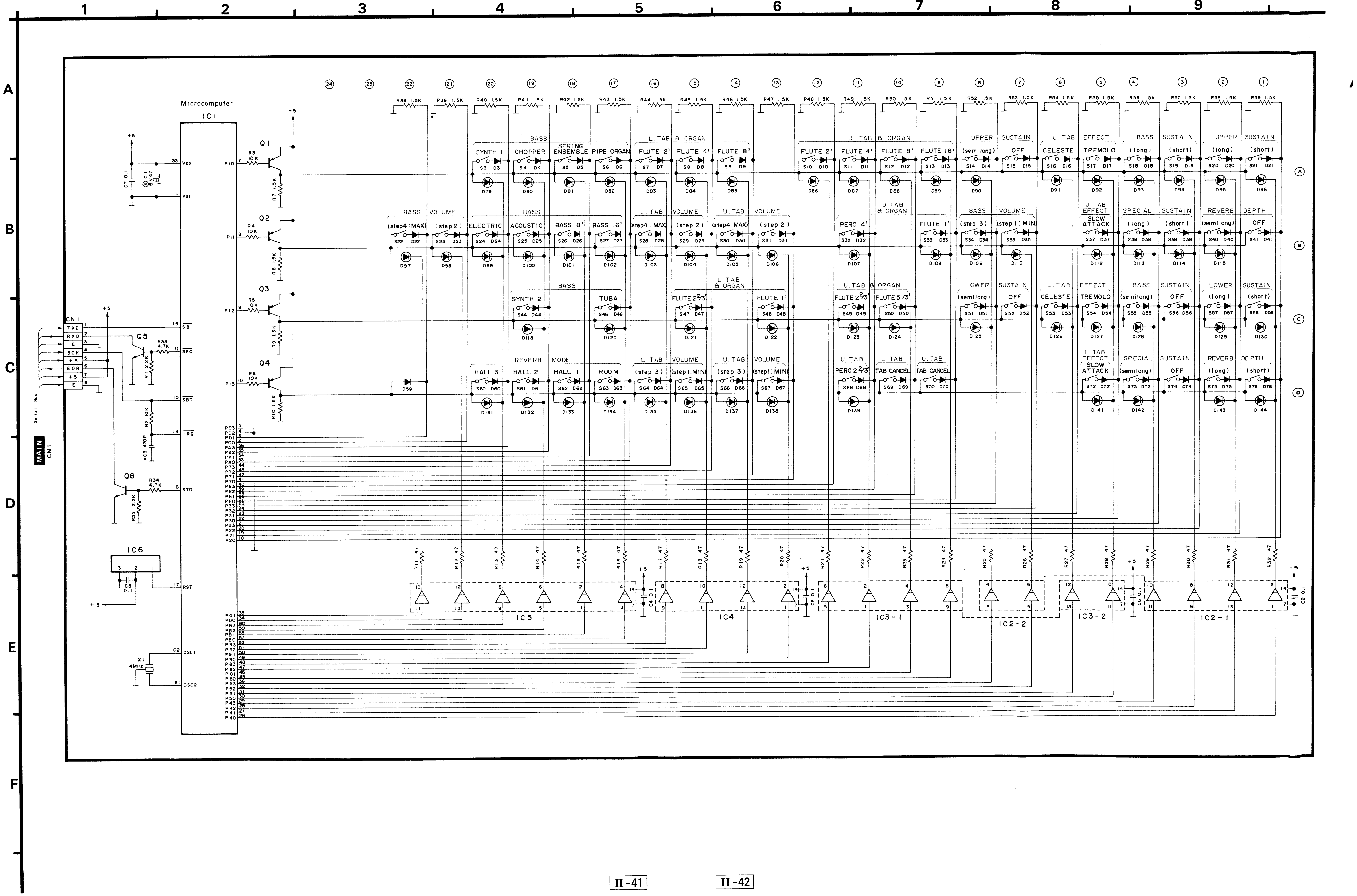

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
ACP AC POWER SUPPLY CIRCUIT
■Products for (M) and (MC) areas.
CN1
SW2
SW1
AC2 Ⓛ
AC1 Ⓝ
L1
L2
C1 250V4700P
C2 250V0.1
F1 6.3A 125V
CN2
T1
120V (ORG)
0V (BLU)
ACP AC POWER SUPPLY CIRCUIT
■Products for European areas.
F2 T1.6A 250V
20V (RED)
0V (YEL)
220V (BRN)
120V (ORG)
0V (BLU)
ACP AC POWER SUPPLY CIRCUIT
■Products for (EK), (XS), (XL), (XR), (X) areas.
S1
Power SW.
PC1
Power Cord
Voltage Selector
F2 T1.6A 250V
F1 T3.15A250V
Power Transformer
(RED) 20V
(GRY) 0V
(RED) 20V
(BRN) 8V
(BRN) 8V
30V
0V
30V
PS POWER SUPPLY CIRCUIT
CN3
Rectifier
Reset Circuit
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
R1 10K
R2 10K
R3 10K
R4 470
R5 47K
R6 47K
R7 100K
R8 47K
C1 25V47
C2 0.1
Q1
Q2
Q3
Q4
Q5
Q6
Q7
R9 1/4W2
R10 1/4W2
R11 1W0.22
R12 680
R13 1.5K
R14 100
R15 1W390
R16 3.3K
R17 1K
L1
C3 35V10
C4 470P
C5 6V2200
C6 0.047
C14 6V2200
IC1
+5V Switching Regulator
Rectifier
+26V
2.2Vp-p
C9 35V3300
-26V
1.5Vp-p
C11 35V2200
R18 1/2W0.47
+15V Regulator
C7 35V10
C8 50V1
R19 1/2W0.47
-15V Regulator
C12 35V10
C13 50V1
M MC area
F3 3.15A 125V
F5 T3.15A 250V
CN1
+5
SNS
E
E
+5
E
-15
+15
EJ
CN9
CN2
+5
E
E
E
FDCN
CN2
CN5
LPA
LPA
LPB
LPB
CPSL
(LAMP)
PA POWER AMPLIFIER CIRCUIT
(BLU)
(BLK)
(BLU)
30V
0V
30V
D1
D2
D3
D4
D5
D8
D9
D11
D12
C30 250V0.1
-Vcc
+Vcc
-39V
+39V
Rectifier
C13 50V4700
C29 50V4700
CN4
E
PMUT
E
EJ
CN7
CN1
E
LCHO
RCHO
EJ
CN6
C12 50V1
R24 27K
C11 220P
R23 15K
R21 2.2K
C10 25V10
R20 39K
C7 50V47
R15 1/4W100
+Vcc
IC1-2
Power Amplifier
R19 4.7K
C9 50V47
-Vcc
C23 0.1
R41 1/2W4.7
R18 2.2K
R17 2.2K
C1 50V1
R1 27K
C2 220P
R2 15K
R3 2.2K
C3 25V10
R4 39K
R9 10K
R8 220K
R5 4.7K
R6 2.2K
R7 2.2K
C4 50V47
R11 680
R12 1K
R13 1K
C5 50V4.7
C6 0.1
R14 1/2W4.7
C14 50V1
C15 50V1
IC1-1
Power Amplifier
-Vcc
CN2
TWL
SPL
E
E
E
SPR
TWR
(BRN)
(WHT)
(BLU)
(BLK)
(BLK)
(PNK)
(ORG)
(BLU)
(WHT)
(YEL)
(RED)
(GRN)
(BLK)
(YEL)
(BLK)
NW NETWORK CIRCUIT
CN3
MAIN
CN3
COM0
COM1
COM2
DB0
DB1
DB2
DB3
DB4
DB5
E
EXP
E
-15
CN1
PKB
CN4
CN5
EXP
E
-15
E
EXP
CN1
L1 4.7mH
L2 4.7mH
CN1
SPL
E
E
SPR
CN2
WF
WF
SPL
SPR
E
E
(RED)
(BLU)
(BLK)
(BRN)
(ORG)
(BLK)
TWL
SP5
Horn Tweeter 16Ω
SPL
SP2
20cm 8Ω
WF
WF
SP1
30cm 16Ω
SPR
SP4
20cm 8Ω
TWR
SP6
Horn Tweeter 16Ω

CPL UPPER CONTROL PANEL LEFT CIRCUIT BOARD


1
2
3
4
5
6
7
8
9
A
B
C
D
E
SXPG140821
CN1
TXD
RXD
E
SCK
+5
EOB
+5
E
Q5
Q6
IC1
IC2
IC3
IC4
IC5
IC6
Q1
Q2
Q3
Q4
X1
DIGITAL REVERB
MODE
DEPTH
HALL 3
HALL 2
HALL 1
ROOM
OFF
BASS SUSTAIN
LOWER SUSTAIN
U & L SPECIAL SUSTAIN
UPPER SUSTAIN
BASS
BASS 16'
BASS 8'
PIPE ORGAN
STRING ENSEMBLE
TUBA
ACOUSTIC
ELECTRIC
CHOPPER
SYNTH 1
SYNTH 2
BASS VOLUME
MAX
MIN
U. TAB CANCEL
L. TAB CANCEL
SLOW ATTACK
TREMOLO
CELESTE
FLUTE 16'
FLUTE 8'
FLUTE 5 1/3'
FLUTE 4'
FLUTE 2 2/3'
FLUTE 2'
FLUTE 1'
PERC 4'
PERC 2 2/3'
U. TAB VOLUME
L. TAB VOLUME

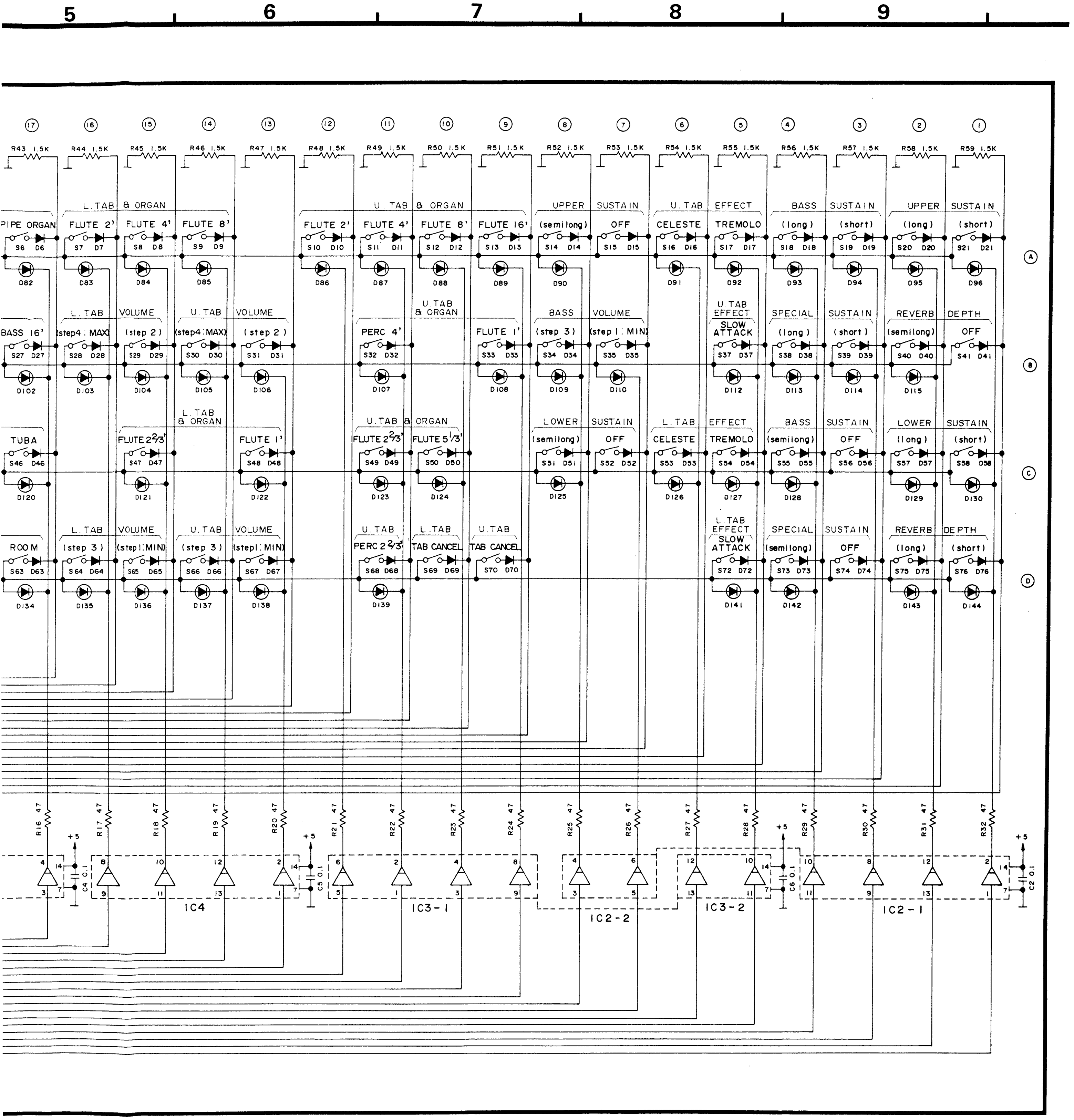
NOTES:
- IC'S
  - IC1: MN15524PGY
  - IC2~5: SVIGM74LS07
  - IC6: MN1280R
- TRANSISTORS
  - Q1~4: 2SA830SB
  - Q5: 2SC1047C
  - Q6: 2SC2320LFG
- DIODES
  - D1~76: MA165TA5
  - D77~144: SVDGSEL4117R

CPL UPPER CONTROL PANEL LEFT CIRCUIT DIAGRAM



1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Microcomputer
IC1
VDD
VSS
P10
P11
P12
P13
Q1
Q2
Q3
Q4
Q5
Q6
R3 10K
R4 10K
R5 10K
R6 10K
R7 1.5K
R8 1.5K
R9 1.5K
R10 1.5K
C7 0.1
C1 6V47
+5
CN1
TXD
RXD
E
SCK
+5
EOB
+5
E
SB1
SB0
SBT
IRQ
STO
RST
OSC1
OSC2
R33 4.7K
R1 2.2K
R2 10K
C3 470P
R34 4.7K
R35 2.2K
Serial Bus
MAIN CN1
IC6
C8 0.1
X1 4MHz
P03
P02
P01
P00
PA3
PA2
PA1
PA0
P73
P72
P71
P70
P63
P62
P61
P60
P33
P32
P31
P30
P23
P22
P21
P20
PB3
PB2
PB1
PB0
P93
P92
P91
P90
P83
P82
P81
P80
P53
P52
P51
P50
P43
P42
P41
P40
R38 1.5K
R39 1.5K
R40 1.5K
R41 1.5K
R42 1.5K
R43 1.5K
R44 1.5K
R45 1.5K
R46 1.5K
R47 1.5K
R48 1.5K
R49 1.5K
R50 1.5K
R51 1.5K
R52 1.5K
R53 1.5K
R54 1.5K
R55 1.5K
R56 1.5K
R57 1.5K
R58 1.5K
R59 1.5K
㉔
㉓
㉒
㉑
⑳
⑲
⑱
⑰
⑯
⑮
⑭
⑬
⑫
⑪
⑩
⑨
⑧
⑦
⑥
⑤
④
③
②
①
Ⓐ
Ⓑ
Ⓒ
Ⓓ
BASS
SYNTH 1
CHOPPER
STRING ENSEMBLE
PIPE ORGAN
L. TAB & ORGAN
FLUTE 2'
FLUTE 4'
FLUTE 8'
U. TAB & ORGAN
FLUTE 2'
FLUTE 4'
FLUTE 8'
FLUTE 16'
UPPER SUSTAIN
(semilong)
OFF
U. TAB EFFECT
CELESTE
TREMOLO
BASS SUSTAIN
(long)
(short)
UPPER SUSTAIN
(long)
(short)
BASS VOLUME
(step4: MAX)
(step 2)
BASS
ELECTRIC
ACOUSTIC
BASS 8'
BASS 16'
L. TAB VOLUME
(step4: MAX)
(step 2)
U. TAB VOLUME
(step4: MAX)
(step 2)
U. TAB & ORGAN
PERC 4'
FLUTE 1'
BASS VOLUME
(step 3)
(step 1: MIN)
U. TAB EFFECT
SLOW ATTACK
SPECIAL SUSTAIN
(long)
(short)
REVERB DEPTH
(semilong)
OFF
BASS
SYNTH 2
TUBA
L. TAB & ORGAN
FLUTE 2 2/3'
FLUTE 1'
U. TAB & ORGAN
FLUTE 2 2/3'
FLUTE 5 1/3'
LOWER SUSTAIN
(semilong)
OFF
L. TAB EFFECT
CELESTE
TREMOLO
BASS SUSTAIN
(semilong)
OFF
LOWER SUSTAIN
(long)
(short)
REVERB MODE
HALL 3
HALL 2
HALL 1
ROOM
L. TAB VOLUME
(step 3)
(step 1: MIN)
U. TAB VOLUME
(step 3)
(step 1: MIN)
U. TAB
PERC 2 2/3'
L. TAB
TAB CANCEL
U. TAB
TAB CANCEL
L. TAB EFFECT
SLOW ATTACK
SPECIAL SUSTAIN
(semilong)
OFF
REVERB DEPTH
(long)
(short)
S3 D3
S4 D4
S5 D5
S6 D6
S7 D7
S8 D8
S9 D9
S10 D10
S11 D11
S12 D12
S13 D13
S14 D14
S15 D15
S16 D16
S17 D17
S18 D18
S19 D19
S20 D20
S21 D21
S22 D22
S23 D23
S24 D24
S25 D25
S26 D26
S27 D27
S28 D28
S29 D29
S30 D30
S31 D31
S32 D32
S33 D33
S34 D34
S35 D35
S37 D37
S38 D38
S39 D39
S40 D40
S41 D41
S44 D44
S46 D46
S47 D47
S48 D48
S49 D49
S50 D50
S51 D51
S52 D52
S53 D53
S54 D54
S55 D55
S56 D56
S57 D57
S58 D58
S60 D60
S61 D61
S62 D62
S63 D63
S64 D64
S65 D65
S66 D66
S67 D67
S68 D68
S69 D69
S70 D70
S72 D72
S73 D73
S74 D74
S75 D75
S76 D76
D59
D79
D80
D81
D82
D83
D84
D85
D86
D87
D88
D89
D90
D91
D92
D93
D94
D95
D96
D97
D98
D99
D100
D101
D102
D103
D104
D105
D106
D107
D108
D109
D110
D112
D113
D114
D115
D118
D120
D121
D122
D123
D124
D125
D126
D127
D128
D129
D130
D131
D132
D133
D134
D135
D136
D137
D138
D139
D141
D142
D143
D144
R11 47
R12 47
R13 47
R14 47
R15 47
R16 47
R17 47
R18 47
R19 47
R20 47
R21 47
R22 47
R23 47
R24 47
R25 47
R26 47
R27 47
R28 47
R29 47
R30 47
R31 47
R32 47
C4 0.1
C5 0.1
C6 0.1
C2 0.1
IC5
IC4
IC3-1
IC2-2
IC3-2
IC2-1

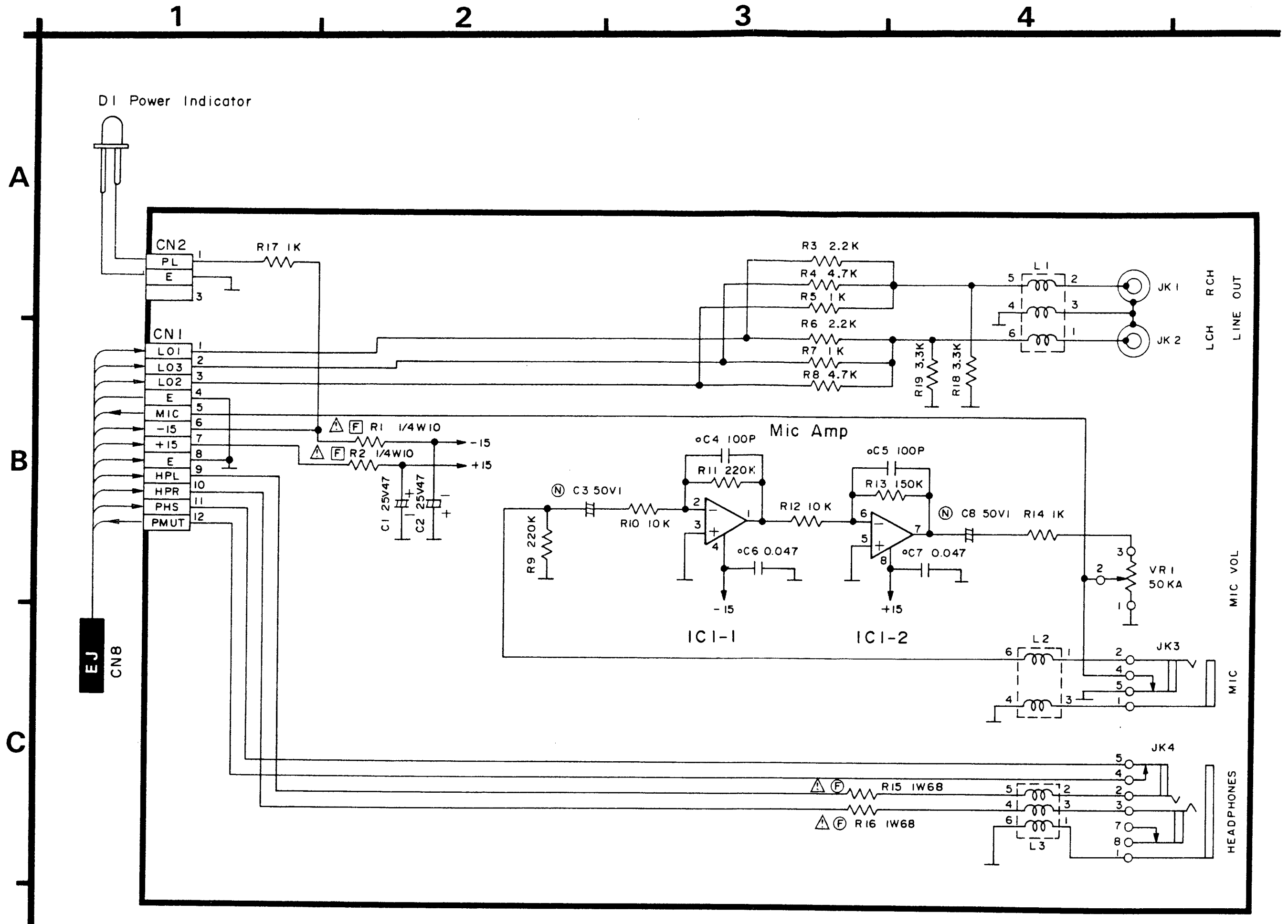
GRAM



5
6
7
8
9
R43 1.5K
R44 1.5K
R45 1.5K
R46 1.5K
R47 1.5K
R48 1.5K
R49 1.5K
R50 1.5K
R51 1.5K
R52 1.5K
R53 1.5K
R54 1.5K
R55 1.5K
R56 1.5K
R57 1.5K
R58 1.5K
R59 1.5K
L. TAB & ORGAN
U. TAB & ORGAN
UPPER
SUSTAIN
U. TAB
EFFECT
BASS
PIPE ORGAN
FLUTE 2'
FLUTE 4'
FLUTE 8'
FLUTE 16'
(semilong)
OFF
CELESTE
TREMOLO
(long)
(short)
BASS 16'
L. TAB
VOLUME
(step4 : MAX)
(step 2)
PERC 4'
FLUTE 1'
(step 3)
(step 1 : MIN)
SLOW ATTACK
SPECIAL
REVERB
DEPTH
LOWER
TUBA
FLUTE 2 2/3'
FLUTE 5 1/3'
ROOM
PERC 2 2/3'
TAB CANCEL
IC4
IC3-1
IC2-2
IC3-2
IC2-1
+5

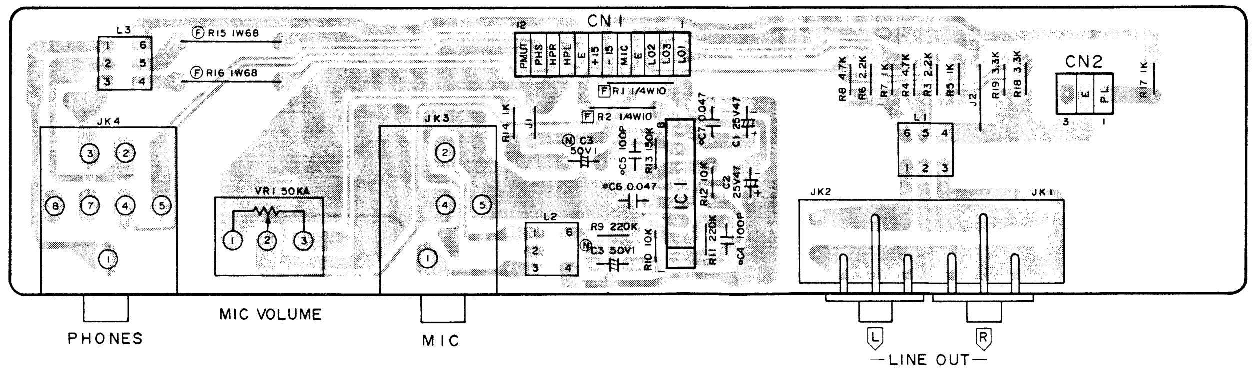
JACK

JACK CIRCUIT



1
2
3
4
A
B
C
D1 Power Indicator
CN2
PL
E
R17 1K
CN1
LO1
LO3
LO2
E
MIC
-15
+15
E
HPL
HPR
PHS
PMUT
R3 2.2K
R4 4.7K
R5 1K
R6 2.2K
R7 1K
R8 4.7K
R19 3.3K
R18 3.3K
L1
JK1
JK2
RCH
LCH
LINE OUT
R1 1/4W10
R2 1/4W10
-15
+15
C1 25V47
C2 25V47
Mic Amp
C4 100P
R11 220K
C5 100P
R13 150K
C3 50V1
R10 10K
R12 10K
C8 50V1
R14 1K
R9 220K
C6 0.047
C7 0.047
IC1-1
IC1-2
VR1 50KA
MIC VOL
EJ
CN8
L2
JK3
MIC
JK4
R15 1W68
R16 1W68
L3
HEADPHONES

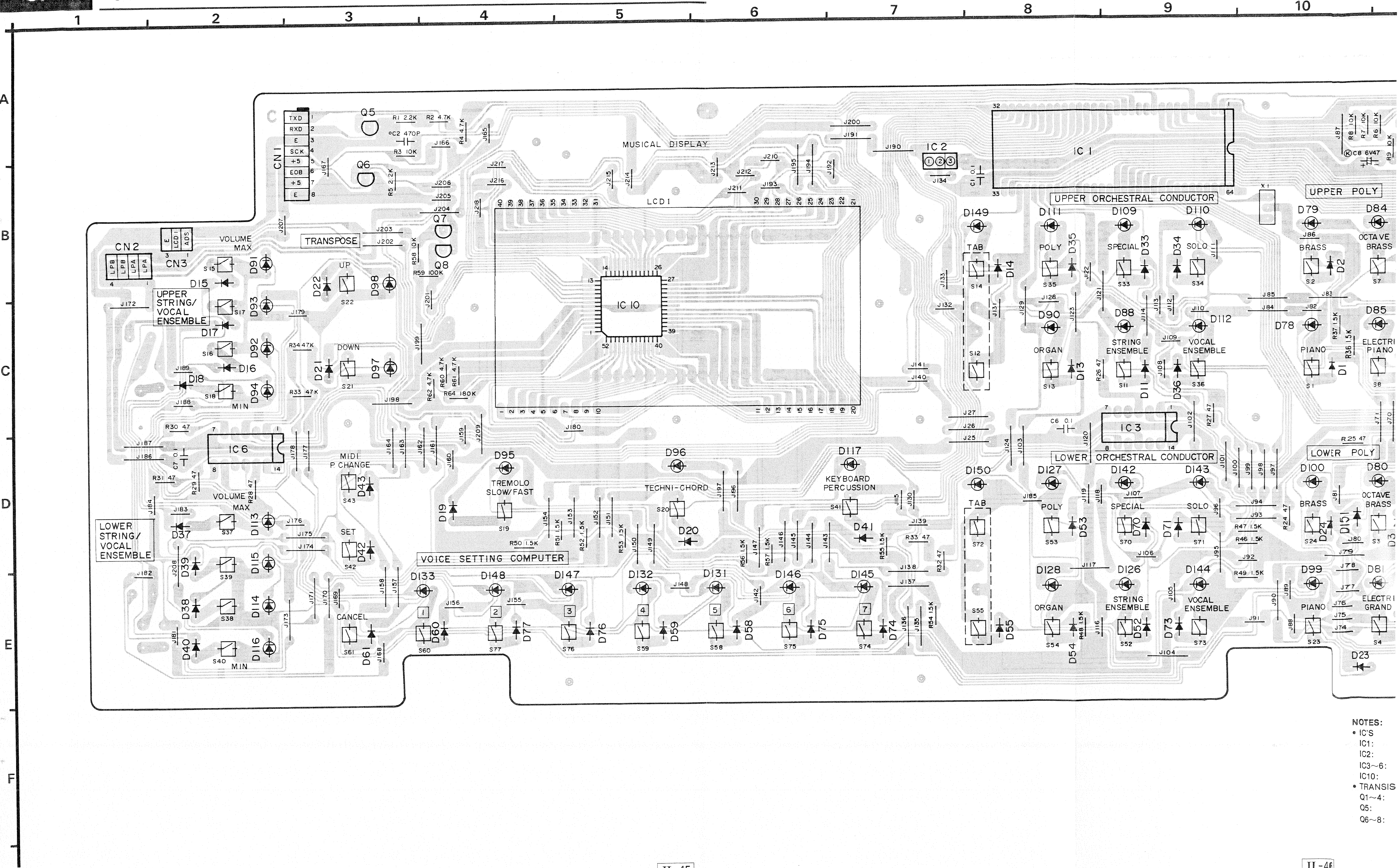
SXPG140511B



L3
R15 1W68
R16 1W68
CN1
PMUT
PHS
HPR
HPL
E
+15
-15
MIC
E
LO2
LO3
LO1
R1 1/4W10
R2 1/4W10
JK4
JK3
VR1 50KA
L2
R9 220K
IC1
R8 4.7K
R6 2.2K
R7 1K
R4 4.7K
R3 2.2K
R5 1K
R19 3.3K
R18 3.3K
CN2
R17 1K
L1
JK2
JK1
PHONES
MIC VOLUME
MIC
L
R
LINE OUT

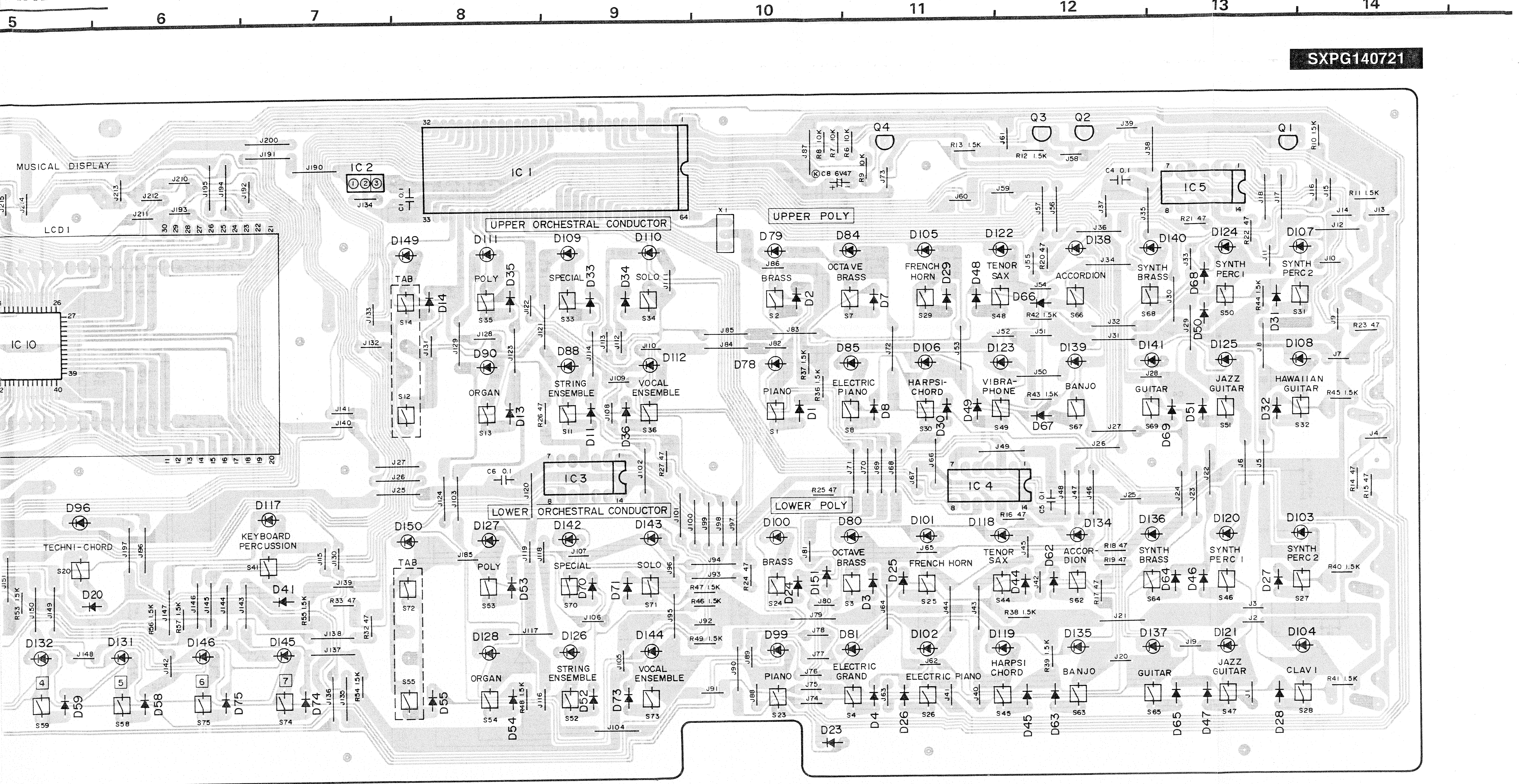
NOTES:
- IC
  IC1: SVIGM5218L

CPC UPPER CONTROL PANEL CENTER CIRCUIT BOARD


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
CN1
TXD
RXD
E
SCK
+5
EOB
+5
E
Q5
Q6
Q7
Q8
IC2
IC1
IC10
IC3
IC6
LCD1
MUSICAL DISPLAY
CN2
CN3
TRANSPOSE
UP
DOWN
VOLUME MAX
MIN
UPPER STRING/ VOCAL ENSEMBLE
LOWER STRING/ VOCAL ENSEMBLE
MIDI P CHANGE
SET
CANCEL
TREMOLO SLOW/FAST
TECHNI-CHORD
KEYBOARD PERCUSSION
VOICE SETTING COMPUTER
TAB
UPPER ORCHESTRAL CONDUCTOR
LOWER ORCHESTRAL CONDUCTOR
POLY
SPECIAL
SOLO
ORGAN
STRING ENSEMBLE
VOCAL ENSEMBLE
UPPER POLY
LOWER POLY
BRASS
OCTAVE BRASS
PIANO
ELECTRIC PIANO
ELECTRIC GRAND
1
2
3
4
5
6
7

NOTES:
- IC'S
  IC1:
  IC2:
  IC3~6:
  IC10:
- TRANSIS
  Q1~4:
  Q5:
  Q6~8:

ARD


5
6
7
8
9
10
11
12
13
14
SXPG140721
MUSICAL DISPLAY
LCD1
IC 10
IC 2
IC 1
IC 3
IC 4
IC 5
Q1
Q2
Q3
Q4
X1
J134
C1 0.1
C6 0.1
C4 0.1
C5 0.1
C8 6V47
R6 10K
R7 10K
R8 10K
R9 10K
R13 1.5K
R12 1.5K
R10 1.5K
R11 1.5K
R21 47
R22 47
R23 47
R20 47
R42 1.5K
R43 1.5K
R44 1.5K
R45 1.5K
R36 1.5K
R37 1.5K
R26 47
R27 47
R25 47
R16 47
R18 47
R19 47
R17 47
R14 47
R15 47
R24 47
R47 1.5K
R46 1.5K
R49 1.5K
R38 1.5K
R39 1.5K
R40 1.5K
R41 1.5K
R33 47
R32 47
R53 1.5K
R54 1.5K
R55 1.5K
R56 1.5K
R57 1.5K
R48 1.5K
UPPER ORCHESTRAL CONDUCTOR
UPPER POLY
LOWER ORCHESTRAL CONDUCTOR
LOWER POLY
TAB
POLY
SPECIAL
SOLO
ORGAN
STRING ENSEMBLE
VOCAL ENSEMBLE
BRASS
OCTAVE BRASS
FRENCH HORN
TENOR SAX
ACCORDION
SYNTH BRASS
SYNTH PERC 1
SYNTH PERC 2
PIANO
ELECTRIC PIANO
HARPSI-CHORD
VIBRA-PHONE
BANJO
GUITAR
JAZZ GUITAR
HAWAIIAN GUITAR
ACCOR-DION
ELECTRIC GRAND
CLAVI
TECHNI-CHORD
KEYBOARD PERCUSSION
4
5
6
7
D149
D111
D109
D110
D112
D90
D88
D79
D84
D105
D122
D138
D140
D124
D107
D78
D85
D106
D123
D139
D141
D125
D108
D96
D117
D150
D127
D142
D143
D100
D80
D101
D118
D134
D136
D120
D103
D20
D41
D132
D131
D146
D145
D128
D126
D144
D99
D81
D102
D119
D135
D137
D121
D104
D23
S14
S12
S35
S33
S34
S13
S11
S36
S2
S7
S29
S48
S66
S68
S50
S31
S1
S8
S30
S49
S67
S69
S51
S32
S20
S41
S72
S53
S70
S71
S24
S3
S25
S44
S62
S64
S46
S27
S55
S59
S58
S75
S74
S54
S52
S73
S23
S4
S26
S45
S63
S65
S47
S28

NOTES:

- IC'S

IC1:	MN15524PGY
IC2:	MN1280R
IC3～6:	SVIGM74LS07
IC10:	SVIGUPD7225

- TRANSISTORS

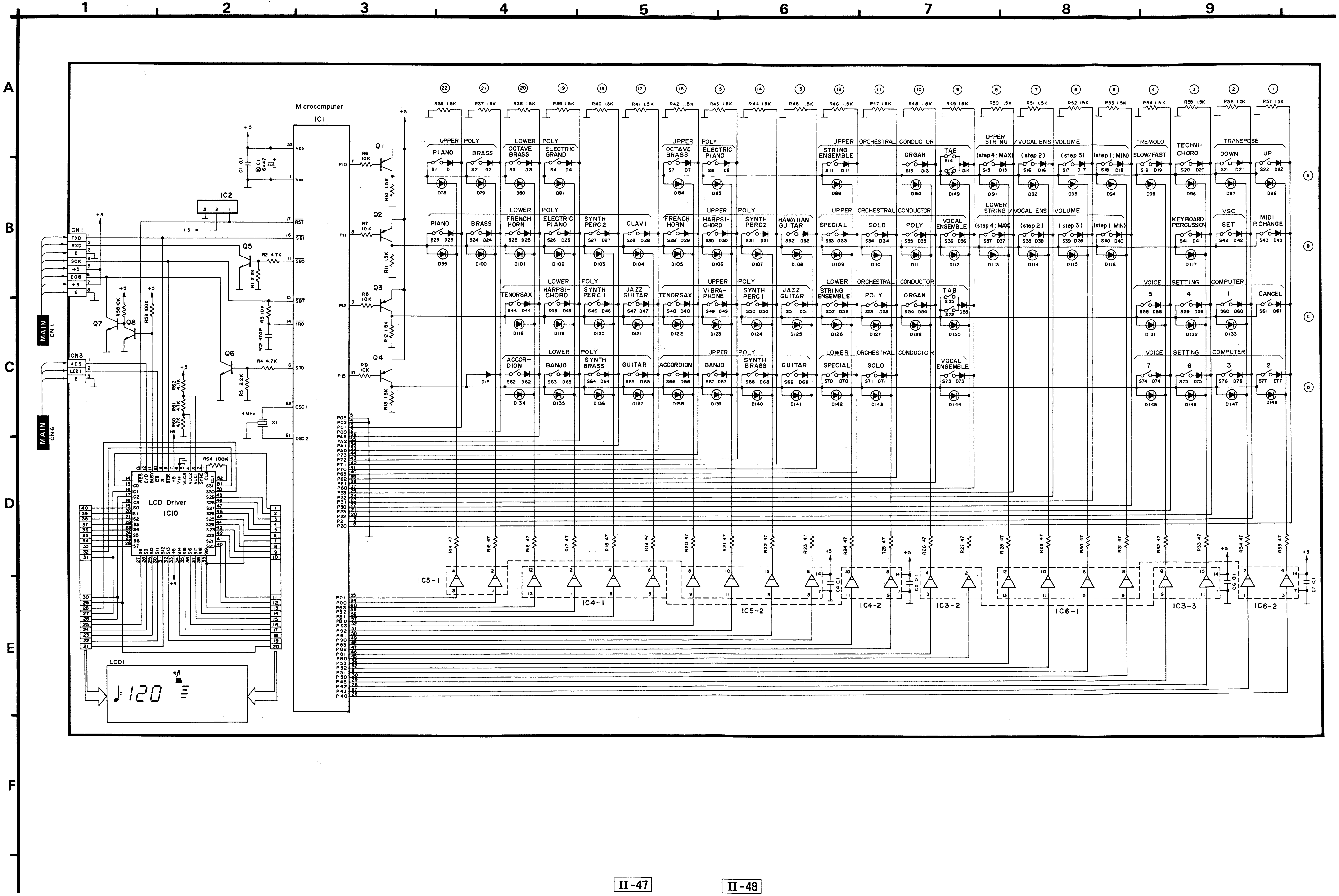
Q1～4:	2SA830SB
Q5:	2SC1047C
Q6～8:	2SC2320LFG

- DIODES

D1～11, 13～71, 73～77, 151:	MA165TA5
D78～88, 90～130, 134～144 149, 150:	SVDGSEL4117R
D131～133, 145～148:	SVDGSEL4417G

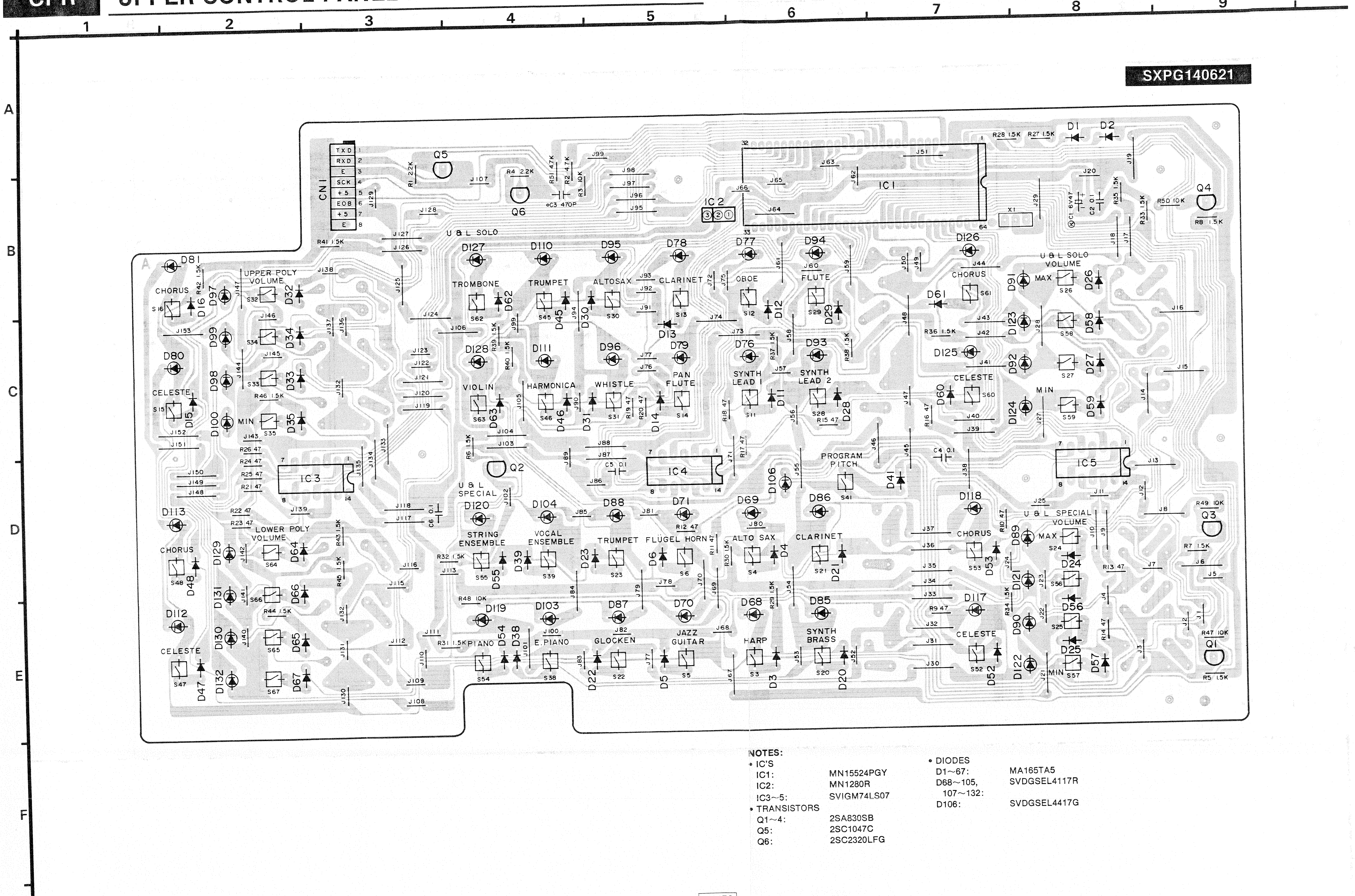
CPC

UPPER CONTROL PANEL CENTER CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Microcomputer
IC1
IC2
LCD Driver
IC10
LCD1
MAIN CN1
MAIN CN6
CN1
CN3
TXD
RXD
SCK
EOB
ADS
LCD1
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
4MHz
X1
R64 180K
UPPER
LOWER
POLY
PIANO
BRASS
OCTAVE BRASS
ELECTRIC GRAND
FRENCH HORN
ELECTRIC PIANO
SYNTH PERC 2
CLAVI
HARPSI-CHORD
SYNTH PERC 1
JAZZ GUITAR
TENORSAX
VIBRA-PHONE
ACCOR-DION
BANJO
SYNTH BRASS
GUITAR
HAWAIIAN GUITAR
STRING ENSEMBLE
ORCHESTRAL
CONDUCTOR
SPECIAL
SOLO
ORGAN
TAB
VOCAL ENSEMBLE
UPPER STRING
LOWER STRING
VOCAL ENS
VOLUME
(step 4: MAX)
(step 2)
(step 3)
(step 1: MIN)
TREMOLO
SLOW/FAST
TECHNI-CHORO
KEYBOARD PERCUSSION
TRANSPOSE
DOWN
UP
VSC
SET
MIDI P.CHANGE
VOICE
SETTING
COMPUTER
CANCEL
IC5-1
IC4-1
IC5-2
IC4-2
IC3-2
IC6-1
IC3-3
IC6-2
♩120

CPR

UPPER CONTROL PANEL RIGHT CIRCUIT BOARD


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
SXPG140621
CN1
TXD
RXD
E
SCK
+5
EOB
+5
E
IC1
IC2
IC3
IC4
IC5
Q1
Q2
Q3
Q4
Q5
Q6
X1
U & L SOLO
UPPER POLY VOLUME
CHORUS
CELESTE
MIN
TROMBONE
TRUMPET
ALTOSAX
CLARINET
OBOE
FLUTE
VIOLIN
HARMONICA
WHISTLE
PAN FLUTE
SYNTH LEAD 1
SYNTH LEAD 2
U & L SOLO VOLUME
MAX
PROGRAM PITCH
U & L SPECIAL
LOWER POLY VOLUME
STRING ENSEMBLE
VOCAL ENSEMBLE
TRUMPET
FLÜGEL HORN
ALTO SAX
CLARINET
U & L SPECIAL VOLUME
PIANO
E. PIANO
GLOCKEN
JAZZ GUITAR
HARP
SYNTH BRASS

NOTES:

- IC'S

IC1:	MN15524PGY
IC2:	MN1280R
IC3~5:	SVIGM74LS07

- TRANSISTORS

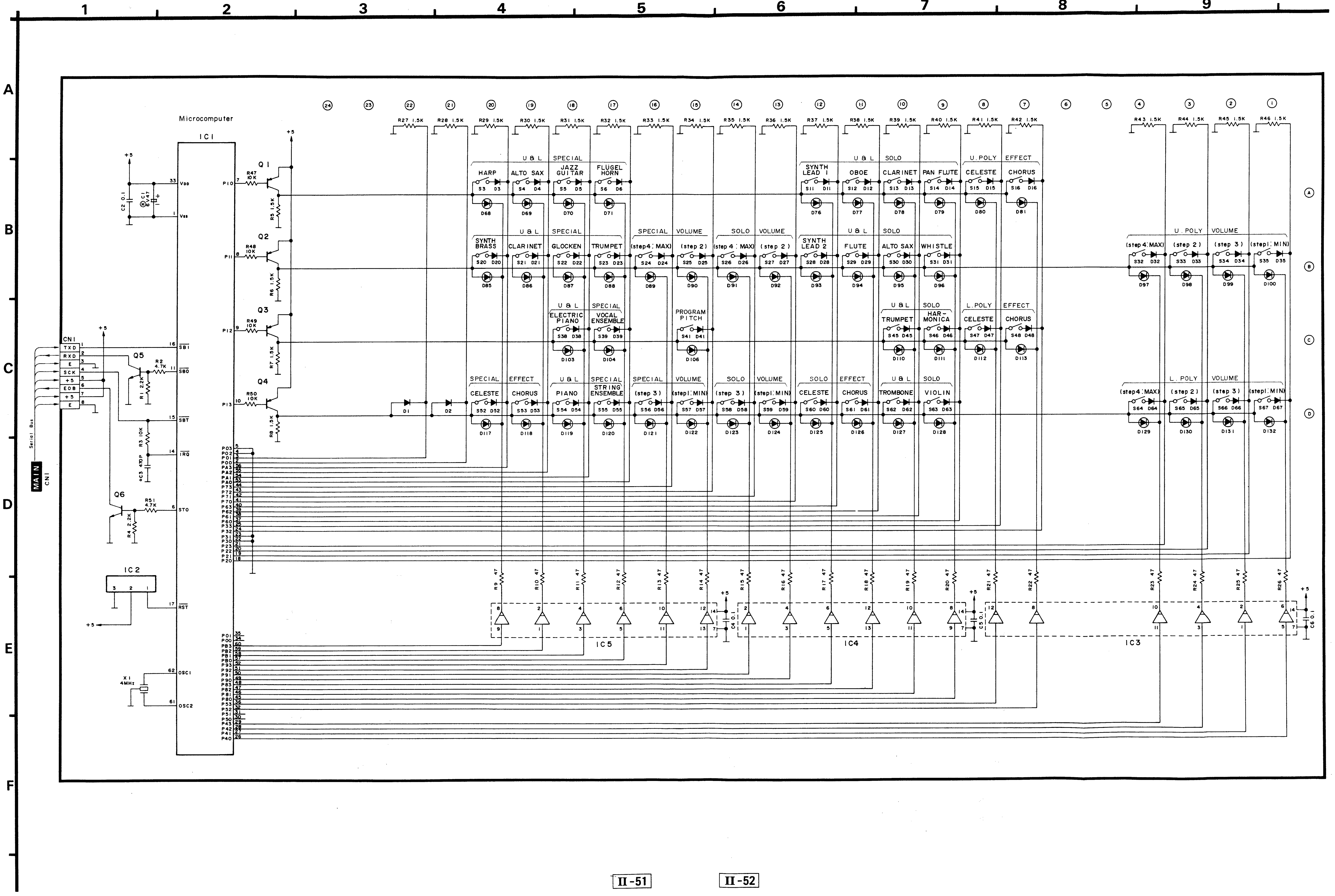
Q1~4:	2SA830SB
Q5:	2SC1047C
Q6:	2SC2320LFG

- DIODES

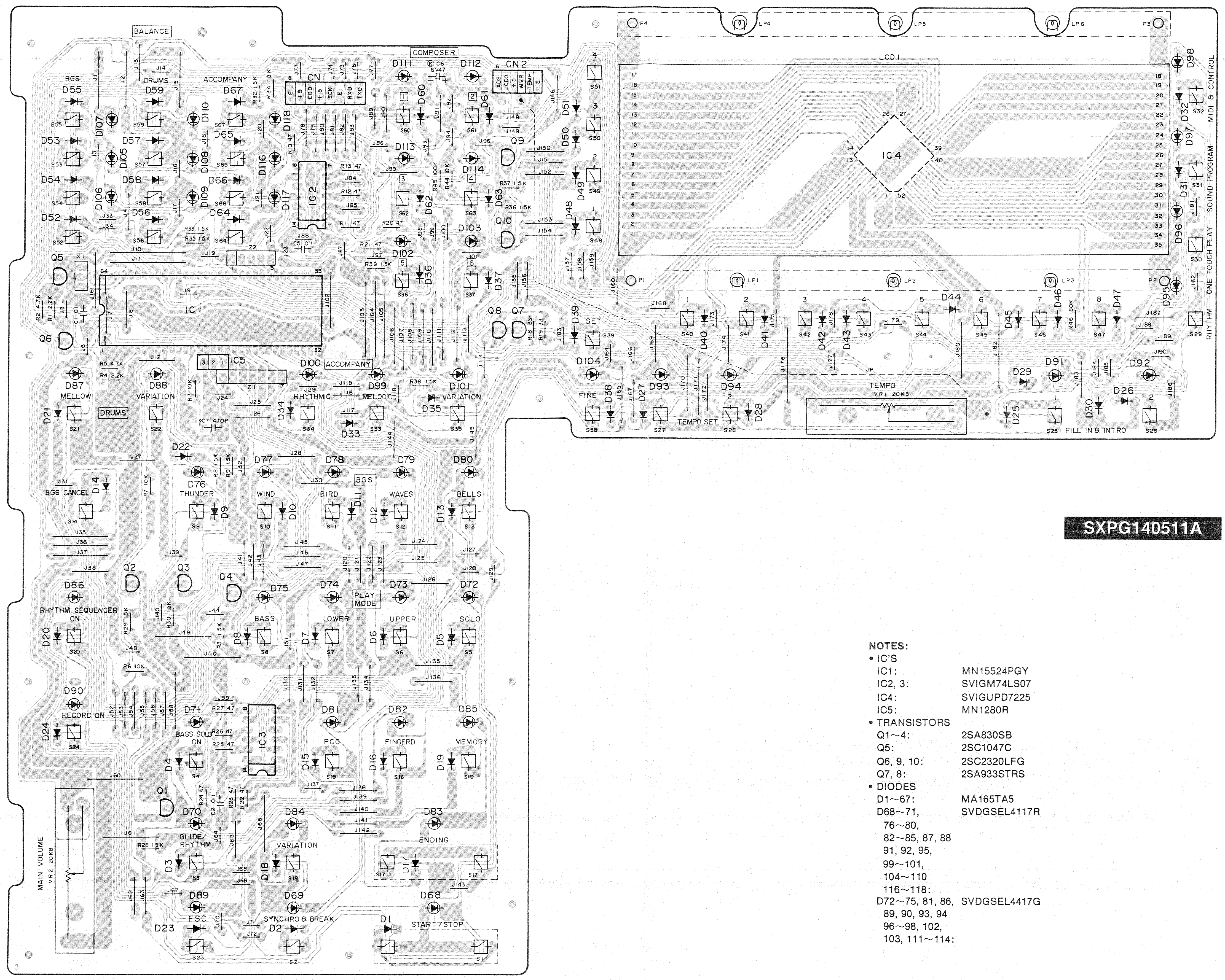
D1~67:	MA165TA5
D68~105, 107~132:	SVDGSEL4117R
D106:	SVDGSEL4417G

CPR

UPPER CONTROL PANEL RIGHT CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Microcomputer
IC1
VDD
VSS
C2 0.1
C1 6V47
+5
Q1
Q2
Q3
Q4
Q5
Q6
R47 10K
R48 10K
R49 10K
R50 10K
R5 1.5K
R6 1.5K
R7 1.5K
R8 1.5K
P10
P11
P12
P13
CN1
TXD
RXD
E
SCK
+5
EOB
Serial Bus
MAIN CN1
R1 2.2K
R2 4.7K
R3 10K
C3 470P
R51 4.7K
R4 2.2K
SB1
SB0
SBT
IRQ
STO
IC2
RST
X1 4MHz
OSC1
OSC2
D1
D2
R27 1.5K
R28 1.5K
R29 1.5K
R30 1.5K
R31 1.5K
R32 1.5K
R33 1.5K
R34 1.5K
R35 1.5K
R36 1.5K
R37 1.5K
R38 1.5K
R39 1.5K
R40 1.5K
R41 1.5K
R42 1.5K
R43 1.5K
R44 1.5K
R45 1.5K
R46 1.5K
㉔ ㉓ ㉒ ㉑ ⑳ ⑲ ⑱ ⑰ ⑯ ⑮ ⑭ ⑬ ⑫ ⑪ ⑩ ⑨ ⑧ ⑦ ⑥ ⑤ ④ ③ ② ①
Ⓐ Ⓑ Ⓒ Ⓓ
U & L
SPECIAL
HARP S3 D3 D68
ALTO SAX S4 D4 D69
JAZZ GUITAR S5 D5 D70
FLUGEL HORN S6 D6 D71
SYNTH LEAD 1 S11 D11 D76
SOLO
OBOE S12 D12 D77
CLARINET S13 D13 D78
PAN FLUTE S14 D14 D79
U. POLY
EFFECT
CELESTE S15 D15 D80
CHORUS S16 D16 D81
SYNTH BRASS S20 D20 D85
CLARINET S21 D21 D86
GLOCKEN S22 D22 D87
TRUMPET S23 D23 D88
VOLUME
(step4: MAX) S24 D24 D89
(step 2) S25 D25 D90
(step 4: MAX) S26 D26 D91
(step 2) S27 D27 D92
SYNTH LEAD 2 S28 D28 D93
FLUTE S29 D29 D94
ALTO SAX S30 D30 D95
WHISTLE S31 D31 D96
(step 4: MAX) S32 D32 D97
(step 2) S33 D33 D98
(step 3) S34 D34 D99
(step1: MIN) S35 D35 D100
ELECTRIC PIANO S38 D38 D103
VOCAL ENSEMBLE S39 D39 D104
PROGRAM PITCH S41 D41 D106
TRUMPET S45 D45 D110
HAR-MONICA S46 D46 D111
L. POLY
CELESTE S47 D47 D112
CHORUS S48 D48 D113
CELESTE S52 D52 D117
CHORUS S53 D53 D118
PIANO S54 D54 D119
STRING ENSEMBLE S55 D55 D120
(step 3) S56 D56 D121
(step1: MIN) S57 D57 D122
(step 3) S58 D58 D123
(step1: MIN) S59 D59 D124
CELESTE S60 D60 D125
CHORUS S61 D61 D126
TROMBONE S62 D62 D127
VIOLIN S63 D63 D128
(step4: MAX) S64 D64 D129
(step 2) S65 D65 D130
(step 3) S66 D66 D131
(step1: MIN) S67 D67 D132
P03 P02 P01 P00 PA3 PA2 PA1 PA0 P73 P72 P71 P70 P63 P62 P61 P60 P33 P32 P31 P30 P23 P22 P21 P20
P01 P00 PB3 PB2 PB1 PB0 P93 P92 P91 P90 P83 P82 P81 P80 P53 P52 P51 P50 P43 P42 P41 P40
R9 47
R10 47
R11 47
R12 47
R13 47
R14 47
R15 47
R16 47
R17 47
R18 47
R19 47
R20 47
R21 47
R22 47
R23 47
R24 47
R25 47
R26 47
IC5
IC4
IC3
C4 0.1
C5 0.1
C6 0.1

CPSL LOWER CONTROL PANEL LEFT CIRCUIT BOARD

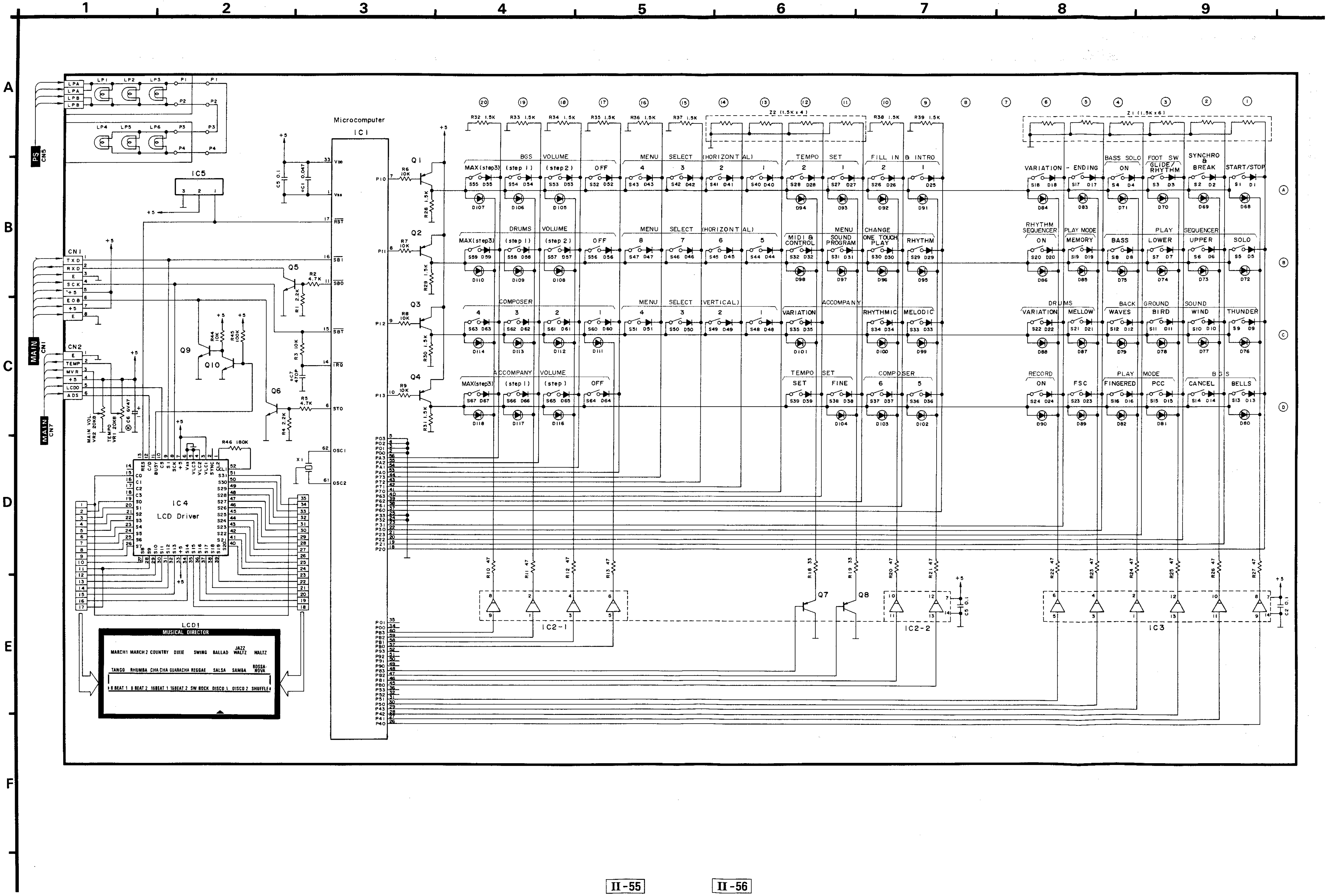

BALANCE
COMPOSER
CN1
CN2
BGS
DRUMS
ACCOMPANY
LCD1
IC1
IC2
IC3
IC4
IC5
MIDI & CONTROL
SOUND PROGRAM
ONE TOUCH PLAY
RHYTHM
SET
FINE
TEMPO SET
TEMPO
VR1 20KB
FILL IN & INTRO
MELLOW
VARIATION
DRUMS
RHYTHMIC
MELODIC
ACCOMPANY
VARIATION
BGS CANCEL
THUNDER
WIND
BIRD
BGS
WAVES
BELLS
RHYTHM SEQUENCER ON
BASS
PLAY MODE
LOWER
UPPER
SOLO
RECORD ON
BASS SOLO ON
PCC
FINGERD
MEMORY
GLIDE/ RHYTHM
VARIATION
ENDING
FSC
SYNCHRO & BREAK
START/STOP
MAIN VOLUME
VR2 20KB
SXPG140511A

NOTES:

• IC'S	
IC1:	MN15524PGY
IC2, 3:	SVIGM74LS07
IC4:	SVIGUPD7225
IC5:	MN1280R
• TRANSISTORS	
Q1～4:	2SA830SB
Q5:	2SC1047C
Q6, 9, 10:	2SC2320LFG
Q7, 8:	2SA933STRS
• DIODES	
D1～67:	MA165TA5
D68～71, 76～80, 82～85, 87, 88 91, 92, 95, 99～101, 104～110 116～118:	SVDGSEL4117R
D72～75, 81, 86, 89, 90, 93, 94 96～98, 102, 103, 111～114:	SVDGSEL4417G

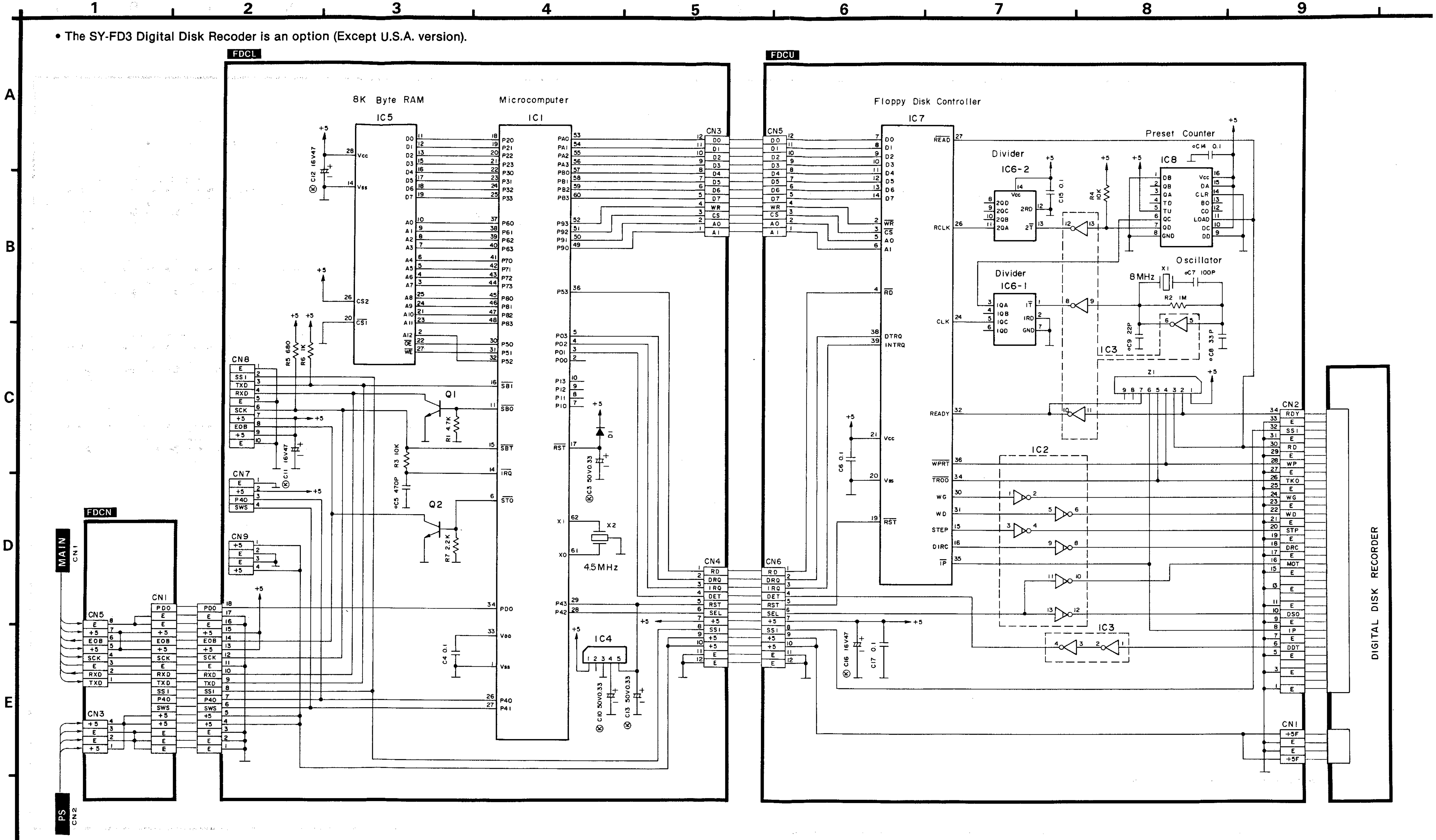
CPSL

LOWER CONTROL PANEL LEFT CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
PS CN5
MAIN CN1
MAIN CN7
LP1
LP2
LP3
LP4
LP5
LP6
LPA
LPB
P1
P2
P3
P4
IC5
CN1
TXD
RXD
E
SCK
+5
EOB
CN2
TEMP
MVR
LCDO
ADS
MAIN VOL VR2 20KB
TEMPO VR1 20KB
Microcomputer
IC1
VDD
VSS
RST
SB1
SB0
SBT
IRQ
STO
OSC1
OSC2
X1
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
R46 180K
IC4
LCD Driver
LCD1
MUSICAL DIRECTOR
MARCH1
MARCH 2
COUNTRY
DIXIE
SWING
BALLAD
JAZZ WALTZ
WALTZ
TANGO
RHUMBA
CHA CHA
GUARACHA
REGGAE
SALSA
SAMBA
BOSSA-NOVA
8 BEAT 1
8 BEAT 2
16BEAT 1
16BEAT 2
SW ROCK
DISCO 1
DISCO 2
SHUFFLE
Z2 (1.5K x 4)
Z1 (1.5K x 6)
BGS VOLUME
MAX(step3)
(step 1)
(step2)
OFF
MENU SELECT (HORIZONTAL)
TEMPO SET
FILL IN & INTRO
VARIATION - ENDING
BASS SOLO
ON
FOOT SW GLIDE/ RHYTHM
SYNCHRO & BREAK
START/STOP
DRUMS VOLUME
MIDI & CONTROL
MENU SOUND PROGRAM
CHANGE ONE TOUCH PLAY
RHYTHM
RHYTHM SEQUENCER
PLAY MODE MEMORY
BASS
PLAY SEQUENCER
LOWER
UPPER
SOLO
COMPOSER
MENU SELECT (VERTICAL)
ACCOMPANY
VARIATION
RHYTHMIC
MELODIC
DRUMS
MELLOW
BACK WAVES
GROUND BIRD
SOUND WIND
THUNDER
ACCOMPANY VOLUME
(step)
TEMPO SET
FINE
COMPOSER
RECORD
FSC
PLAY MODE
FINGERED
PCC
BGS
CANCEL
BELLS
IC2-1
IC2-2
IC3

FDCU FDCL FDCN FD CONTROL UPPER, FD CONTROL LOWER, FD CONNECTOR CIRCUIT DIAGRAM

- The SY-FD3 Digital Disk Recoder is an option (Except U.S.A. version).


1 2 3 4 5 6 7 8 9
A B C D E F
FDCL
FDCU
FDCN
8K Byte RAM
IC5
Microcomputer
IC1
Floppy Disk Controller
IC7
Divider
IC6-2
IC6-1
Preset Counter
IC8
Oscillator
8MHz X1
IC2
IC3
IC4
Z1
X2 4.5MHz
Q1
Q2
D1
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
MAIN CN1
PS CN2
DIGITAL DISK RECORDER

FDCL

NOTES:

- IC'S

IC1:	MN15621PGL
IC4:	SVIGM51953A
IC5:	SVIGD4364X15

- TRANSISTORS

Q1:	2SC1047C
Q2:	2SC2320LFG

- DIODES

D1:	MA165TA5

FDCU

NOTES:

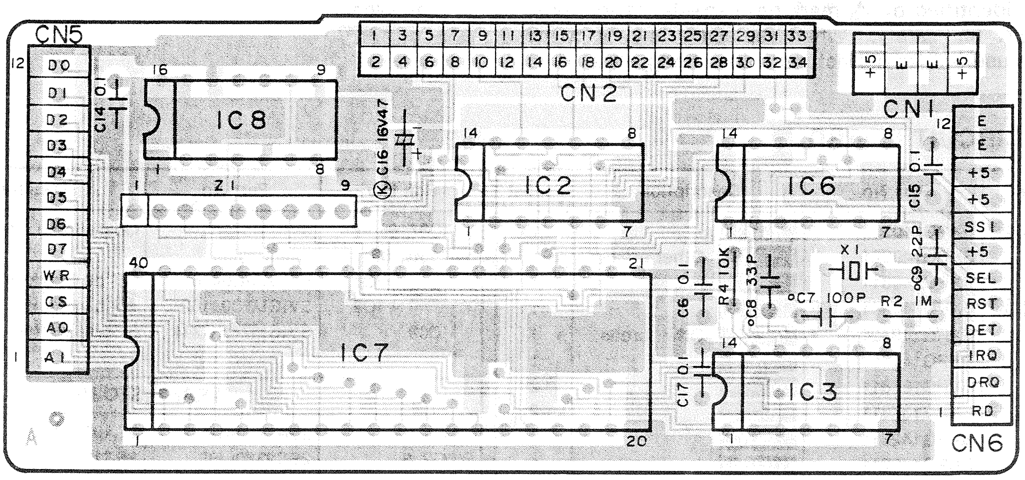
- IC'S

IC2:	SVIGM74LS05
IC3:	SVIGTC40H004
IC6:	SVIGM74LS393
IC7:	SVIGM5W17930
IC8:	SVIGM74LS193

FDCU FDCL FDCN CIRCUIT BOARD

FDCU FD CONTROL UPPER P.C.B.

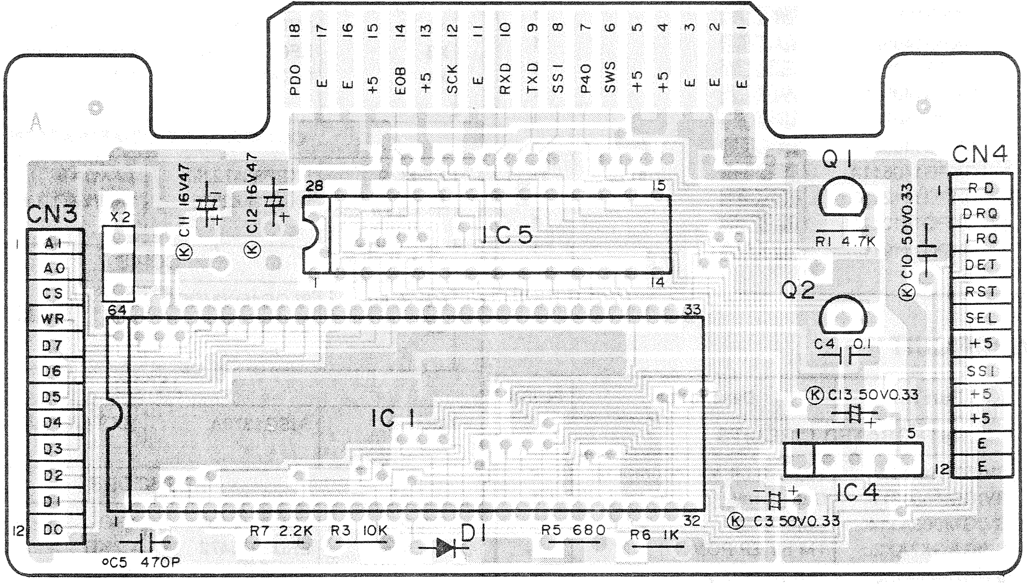
SXPG141211B


CN5
D0
D1
D2
D3
D4
D5
D6
D7
WR
CS
A0
A1
12
1
C14 0.1
IC8
16
9
1
8
Z1
9
C16 16V47
CN2
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34
IC2
14
8
1
7
IC6
14
8
1
7
C15 0.1
CN1
+5
E
E
+5
X1
C9 22P
R2 1M
C7 100P
C8 33P
R4 10K
C6 0.1
IC7
40
21
1
20
C17 0.1
IC3
14
8
1
7
CN6
12
E
E
+5
+5
SS1
+5
SEL
RST
DET
IRQ
DRQ
RD
1
A

Circuit view on top of P.C.B.

FDCL FD CONTROL LOWER P.C.B.

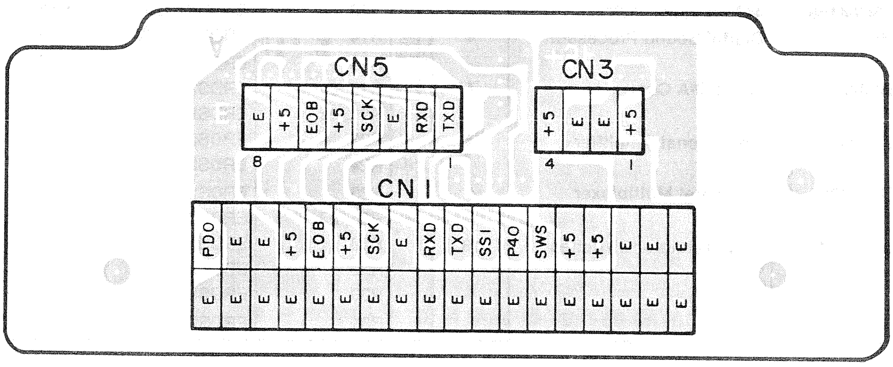
SXPG141211A


18 PDO
17 E
16 E
15 +5
14 EOB
13 +5
12 SCK
11 E
10 RXD
9 TXD
8 SS1
7 P40
6 SWS
5 +5
4 +5
3 E
2 E
1 E
A
CN3
1
A1
A0
CS
WR
D7
D6
D5
D4
D3
D2
D1
D0
12
X2
C11 16V47
C12 16V47
IC5
28
15
1
14
IC1
64
33
1
32
C5 470P
R7 2.2K
R3 10K
D1
R5 680
R6 1K
Q1
R1 4.7K
Q2
C4 0.1
C10 50V0.33
C13 50V0.33
C3 50V0.33
IC4
1
5
CN4
1
RD
DRQ
IRQ
DET
RST
SEL
+5
SS1
+5
+5
E
E
12

Circuit view on top of P.C.B.

FDCN FD CONNECTOR P.C.B.

SXPG141911


CN5
E
+5
EOB
+5
SCK
E
RXD
TXD
8
1
CN3
+5
E
E
+5
4
1
CN1
PDO
E
E
+5
EOB
+5
SCK
E
RXD
TXD
SS1
P40
SWS
+5
+5
E
E
E
E E E E E E E E E E E E E E E E E E

REPLACEMENT PARTS LIST......P.C.B. and Wiring Parts

Notes:

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■ PRINTED CIRCUIT BOARD

	NLA	Area	Part No.	Description	Per/Set
○	NLA	M EZ	SXPG140251	MAIN	1
○	NLA		SXPG140221	MAIN Other areas	1
○	NLA		SXPG140311	SG	1
○	NLA	M EZ	SXPG140441	EJ	1
○	NLA		SXPG140421	EJ Other areas	1
○	NLA		SXPG141811	DRV	1
○	NLA		SXPG137611	MKB1	2
○	NLA		SXPG137811	MKB3	2
○	NLA		SXPG142811	PKB	1
	NLA		SXPG103211	EXP	1
○	NLA	M MC	S0PG140921	ACP	1
○	NLA	EK XS XL XR X	S0PG140931	ACP	1
○	NLA		S0PG140911	ACP Other areas	1
○	NLA	M MC	SXPG139351	PS	1
○	NLA		SXPG139341	PS Other areas	1
○	NLA		SXPG139241	PA	1
○	NLA		SXPG140521E	NW	1
○	NLA		SXPG140821	CPL	1
○	NLA		SXPG140511B	JACK	1
○	NLA		SXPG140721	CPC	1
○	NLA		SXPG140621	CPR	1
○	NLA		SXPG140511A	CPSL	1
○	NLA	M	SXPG141211B	FDCU	1
○	NLA	M	SXPG141211A	FDCL	1
○	NLA		SXPG141911	FDCN	1

MAIN MAIN CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUITS		
○	IC1, 3	SVIG7810HCW	1 chip 8 bit Microcomputer	2
	IC2	SVIGM6050211	Gate Array	1
	IC4	SVIGM603A114	Gate Array	1
○	IC5	SVIGAGX7AX2	1M bit EP ROM	1
	IC6, 7	SVIGD446415L	16K bit SRAM	2
○	IC8	SVIG2GX7BX2	256K bit EP ROM	1
	IC9	SVIGD446C25	16K bit SRAM	1
	IC10	SVIGPC900	Photo Coupler	1
	IC11	SVIGM74LS07	Hex Buffers (O.C.)	1
	IC12	SVIGM74LS05	Hex Inverters (O.C.)	1
○	IC13	SVIGU3C04158	4M bit Mask ROM	1
	IC14, 26, 39, 51	MN6635	Digital Sound Processor	4
	IC15, 27, 40, 52	SVIGBA9221	12 bit D-A Converter	4
	IC16, 28, 41, 53	SVIGM5238L	Operational Amplifier	4
	IC17, 29, 42, 54	SVIGT74H4051	8-channel Multiplexer	4
	IC18~21, 30~33, 43~46, 55~58	SVIGM74H4066	Quad Bilateral Switches	16
	IC37, 62~64, 66~68	SVIGM5218L	Operational Amplifier	7
○	IC38 ┬ IC1	SVIGU3C04161	4M bit Mask ROM	1
	└ IC2	SVIGU3C04162	4M bit Mask ROM	1
	IC69	SVIGM74HC244	3-State Buffer	1
		TRANSISTORS		
S	Q1	2SA1015-GR	2SA933STRS	1
S	Q2, 3	2SC2320LFG	2SC1310FG	2
		DIODES		
	D9~26, 100	MA165TA5		19
		OSCILLATORS		
	X1, 2	SVQG49S1500T	15MHz, Quartz Oscillator	2
	X3	EF0FC4004A3	4MHz, Ceramic Oscillator	1
	X4, 5	SVQG49S1600T	16MHz, Quartz Oscillator	2
		COMPONENT COMBINATIONS		
	Z1~4, 9	EXBP88472JM	4.7KΩ×8	5
	Z5~8	EXKS14Z2073	1KΩ/2KΩ, Ladder Network	4
		COILS		
	L2~4, 6	SLQG15W34DPQ	Coil } M EZ	4
	L5	SLQG10W10D1P	Coil } M EZ	1
		JACKS		
	JK1~3	SJSG1370A	MIDI (IN, OUT, THRU)	3
		RESISTORS		
	R2	ERDS2TJ102	1KΩ	1
	R4	ERDS2TJ472	4.7KΩ	1
	R7	ERDS2TJ333	33KΩ	1
	R8	ERDS2TJ472	4.7KΩ	1
	R9	ERDS2TJ330	33Ω	1
	R10	ERDS2TJ331	330Ω	1
	R11	ERDS2TJ681	680Ω	1
	R12	ERDS2TJ102	1KΩ	1
	R13	ERDS2TJ332	3.3KΩ	1
	R14~17	ERDS2TJ472	4.7KΩ	4
	R18	ERDS2TJ105	1MΩ	1
	R19, 20	ERDS2TJ472	4.7KΩ	2
	R21, 22	ERDS2TJ101	100Ω	2
	R23	ERDS2TJ221	220Ω	1
	R24	ERDS2TJ103	10KΩ	1
	R25	ERDS2TJ334	330KΩ	1
	R26, 27	ERDS2TJ101	100Ω	2
	R28	ERDS2TJ221	220Ω	1
	R29	ERDS2TJ103	10KΩ	1
	R30	ERDS2TJ334	330KΩ	1
	R31	ERDS2TJ221	220Ω	1

Ref. No.	Part No.	Description	Per/Set
R32	ERDS2TJ331	330Ω	1
R33	ERDS2TJ330	33Ω	1
R37	ERDS2TJ184	180KΩ	1
R40	ERDS2TJ473	47KΩ	1
R41	ERDS2TJ222	2.2KΩ	1
R42	ERDS2TJ103	10KΩ	1
R43	ERDS2TJ222	2.2KΩ	1
R44~46	ERDS2TJ471	470Ω	3
R47	ERDS2TJ333	33KΩ	1
R48	ERDS2TJ183	18KΩ	1
R49, 50	ER0S2CKF4700	470Ω, ±1%	2
R51	ERDS2TJ151	150Ω	1
R52, 53	ERDS2TJ331	330Ω	2
R54	ERDS2TJ473	47KΩ	1
R55	ERDS2TJ151	150Ω	1
R56, 57	ERDS2TJ331	330Ω	2
R58	ERDS2TJ473	47KΩ	1
R59	ERDS2TJ151	150Ω	1
R60, 61	ERDS2TJ331	330Ω	2
R62	ERDS2TJ473	47KΩ	1
R63	ERDS2TJ151	150Ω	1
R64, 65	ERDS2TJ331	330Ω	2
R66	ERDS2TJ473	47KΩ	1
R67	ERDS2TJ151	150Ω	1
R68, 69	ERDS2TJ331	330Ω	2
R70	ERDS2TJ473	47KΩ	1
R71	ERDS2TJ151	150Ω	1
R72, 73	ERDS2TJ331	330Ω	2
R74	ERDS2TJ473	47KΩ	1
R75	ERDS2TJ151	150Ω	1
R76, 77	ERDS2TJ331	330Ω	2
R78	ERDS2TJ473	47KΩ	1
R79	ERDS2TJ151	150Ω	1
R80, 81	ERDS2TJ331	330Ω	2
R82	ERDS2TJ473	47KΩ	1
R83, 84	ERDS2TJ471	470Ω	2
R85	ERDS2TJ123	12KΩ	1
R86, 87	ER0S2CKF4700	470Ω, ±1%	2
R88	ERDS2TJ151	150Ω	1
R89, 90	ERDS2TJ331	330Ω	2
R91	ERDS2TJ473	47KΩ	1
R92	ERDS2TJ151	150Ω	1
R93, 94	ERDS2TJ331	330Ω	2
R95	ERDS2TJ473	47KΩ	1
R96	ERDS2TJ151	150Ω	1
R97, 98	ERDS2TJ331	330Ω	2
R99	ERDS2TJ473	47KΩ	1
R100	ERDS2TJ151	150Ω	1
R101, 102	ERDS2TJ331	330Ω	2
R103	ERDS2TJ473	47KΩ	1
R104	ERDS2TJ151	150Ω	1
R105, 106	ERDS2TJ331	330Ω	2
R107	ERDS2TJ473	47KΩ	1
R108	ERDS2TJ151	150Ω	1
R109, 110	ERDS2TJ331	330Ω	2
R111	ERDS2TJ473	47KΩ	1
R112	ERDS2TJ151	150Ω	1
R113, 114	ERDS2TJ331	330Ω	2
R115	ERDS2TJ473	47KΩ	1
R116	ERDS2TJ151	150Ω	1
R117, 118	ERDS2TJ331	330Ω	2
R119~121	ERDS2TJ473	47KΩ	3
R122	ERDS2TJ103	10KΩ	1
R123, 124	ERDS2TJ472	4.7KΩ	2
R125	ERDS2TJ104	100KΩ	1
R126	ERDS2TJ225	2.2MΩ	1
R137, 138 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
R140 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	1

Ref. No.	Part No.	Description	Per/Set
R141, 142	ERDS2TJ471	470Ω	2
R143	ERDS2TJ123	12KΩ	1
R144, 145	ER0S2CKF4700	470Ω, ±1%	2
R146	ERDS2TJ151	150Ω	1
R147, 148	ERDS2TJ331	330Ω	2
R149	ERDS2TJ473	47KΩ	1
R150	ERDS2TJ151	150Ω	1
R151, 152	ERDS2TJ331	330Ω	2
R153	ERDS2TJ473	47KΩ	1
R154	ERDS2TJ151	150Ω	1
R155, 156	ERDS2TJ331	330Ω	2
R157	ERDS2TJ473	47KΩ	1
R158	ERDS2TJ151	150Ω	1
R159, 160	ERDS2TJ331	330Ω	2
R161	ERDS2TJ473	47KΩ	1
R162	ERDS2TJ151	150Ω	1
R163, 164	ERDS2TJ331	330Ω	2
R165	ERDS2TJ473	47KΩ	1
R166	ERDS2TJ151	150Ω	1
R167, 168	ERDS2TJ331	330Ω	2
R169	ERDS2TJ473	47KΩ	1
R170	ERDS2TJ151	150Ω	1
R171, 172	ERDS2TJ331	330Ω	2
R173	ERDS2TJ473	47KΩ	1
R174	ERDS2TJ151	150Ω	1
R175, 176	ERDS2TJ331	330Ω	2
R177~179	ERDS2TJ473	47KΩ	3
R180, 181	ERDS2TJ471	470Ω	2
R182	ERDS2TJ123	12KΩ	1
R183, 184	ER0S2CKF4700	470Ω, ±1%	2
R185	ERDS2TJ151	150Ω	1
R186, 187	ERDS2TJ331	330Ω	2
R188	ERDS2TJ473	47KΩ	1
R189	ERDS2TJ151	150Ω	1
R190, 191	ERDS2TJ331	330Ω	2
R192	ERDS2TJ473	47KΩ	1
R193	ERDS2TJ151	150Ω	1
R194, 195	ERDS2TJ331	330Ω	2
R196	ERDS2TJ473	47KΩ	1
R197	ERDS2TJ151	150Ω	1
R198, 199	ERDS2TJ331	330Ω	2
R200	ERDS2TJ473	47KΩ	1
R201	ERDS2TJ151	150Ω	1
R202, 203	ERDS2TJ331	330Ω	2
R204	ERDS2TJ473	47KΩ	1
R205	ERDS2TJ151	150Ω	1
R206, 207	ERDS2TJ331	330Ω	2
R208	ERDS2TJ473	47KΩ	1
R209	ERDS2TJ151	150Ω	1
R210, 211	ERDS2TJ331	330Ω	2
R212	ERDS2TJ473	47KΩ	1
R213	ERDS2TJ151	150Ω	1
R214, 215	ERDS2TJ331	330Ω	2
R216, 217	ERDS2TJ473	47KΩ	2
R218	ERDS2TJ104	100KΩ	1
R219, 220	ERDS2TJ473	47KΩ	2
R221~223	ERDS2TJ104	100KΩ	3
R224	ERDS2TJ101	100Ω	1
R227~229	ERDS2TJ104	100KΩ	3
R230	ERDS2TJ101	100Ω	1
R233~235	ERDS2TJ104	100KΩ	3
R236	ERDS2TJ101	100Ω	1
R239~241	ERDS2TJ104	100KΩ	3
R242	ERDS2TJ101	100Ω	1
R245~247	ERDS2TJ104	100KΩ	3
R248	ERDS2TJ101	100Ω	1
R251, 252	ERDS2TJ473	47KΩ	2
R254	ERDS2TJ471	470Ω	1

	Ref. No.	Part No.	Description	Per/Set
	R255	ERDS2TJ333	33KΩ	1
	R256, 257	ERDS2TJ472	4.7KΩ	2
	CAPACITORS			
	C1	ECQG1H102KZ	0.001µF	1
	C2	ECCR1H221J	220pF	1
	C3~5	ECKR1E473ZV	0.047µF	3
	C6	ECEA0JU331	330µF, 6.3V	1
	C7	ECKR1E473ZV	0.047µF	1
	C8	ECEA0JU331	330µF, 6.3V	1
	C10	ECKR1E473ZV	0.047µF	1
	C11~14	ECCR1H220J	22pF	4
	C15	ECEA1HU010	1µF, 50V	1
	C16, 17	ECKR1E473ZV	0.047µF	2
	C18	ECQV1H104JZ	0.1µF	1
○	C20	AC2061G473Z5	0.047F, 5.5V, Memory Back-up	1
	C22~24	ECKR1E473ZV	0.047µF	3
	C25, 26	ECCR1H220J	22pF	2
	C27	ECEA0JU101	100µF, 6.3V	1
	C28	ECEA0JU470	47µF, 6.3V	1
	C29	ECCR1H221J	220pF	1
	C31	ECQG1H472KZ	0.0047µF	1
	C32	ECQG1H102KZ	0.001µF	1
	C33	ECQG1H472KZ	0.0047µF	1
	C34	ECQG1H102KZ	0.001µF	1
	C35	ECQG1H472KZ	0.0047µF	1
	C36	ECQG1H102KZ	0.001µF	1
	C37	ECQG1H472KZ	0.0047µF	1
	C38	ECQG1H102KZ	0.001µF	1
	C39	ECQG1H472KZ	0.0047µF	1
	C40	ECQG1H102KZ	0.001µF	1
	C41	ECQG1H472KZ	0.0047µF	1
	C42	ECQG1H102KZ	0.001µF	1
	C43	ECQG1H472KZ	0.0047µF	1
	C44	ECQG1H102KZ	0.001µF	1
	C45	ECQG1H472KZ	0.0047µF	1
	C46	ECQG1H102KZ	0.001µF	1
	C48	ECCR1H471J	470pF	1
	C49	ECQV1H104JZ	0.1µF	1
	C50, 51	ECKR1E473ZV	0.047µF	2
	C52	ECCR1H221J	220pF	1
	C53	ECKR1E473ZV	0.047µF	1
	C54	ECEA0JU101	100µF, 6.3V	1
	C55	ECEA0JU470	47µF, 6.3V	1
	C56	ECKR1E473ZV	0.047µF	1
	C58	ECQG1H472KZ	0.0047µF	1
	C59	ECQG1H102KZ	0.001µF	1
	C60	ECQG1H472KZ	0.0047µF	1
	C61	ECQG1H102KZ	0.001µF	1
	C62	ECQG1H472KZ	0.0047µF	1
	C63	ECQG1H102KZ	0.001µF	1
	C64	ECQG1H472KZ	0.0047µF	1
	C65	ECQG1H102KZ	0.001µF	1
	C66	ECQG1H472KZ	0.0047µF	1
	C67	ECQG1H102KZ	0.001µF	1
	C68	ECQG1H472KZ	0.0047µF	1
	C69	ECQG1H102KZ	0.001µF	1
	C70	ECQG1H472KZ	0.0047µF	1
	C71	ECQG1H102KZ	0.001µF	1
	C72	ECQG1H472KZ	0.0047µF	1
	C73	ECQG1H102KZ	0.001µF	1
	C74	ECCR1H471J	470pF	1
	C76	ECQV1H104JZ	0.1µF	1
	C77	ECQG1H472KZ	0.0047µF	1
	C78	ECQG1H222KZ	0.0022µF	1
	C79	ECEA0JU101	100µF, 6.3V	1
	C80	ECQV1H104JZ	0.1µF	1
	C81, 82	ECEA1CU101	100µF, 16V	2
	C83	ECEA0JU331	330µF, 6.3V	1
○	C85	ECRR1H104ZF	0.1µF	1
	C86, 87	ECKR1E473ZV	0.047µF	2
	C88, 89	ECCR1H220J	22pF	2
	C90	ECCR1H221J	220pF	1
	C91	ECEA0JU101	100µF, 6.3V	1
	C92, 93	ECKR1E473ZV	0.047µF	2
	C94	ECQG1H472KZ	0.0047µF	1
	C95	ECQG1H102KZ	0.001µF	1
	C96	ECQG1H472KZ	0.0047µF	1
	C97	ECQG1H102KZ	0.001µF	1
	C98	ECQG1H472KZ	0.0047µF	1
	C99	ECQG1H102KZ	0.001µF	1
	C100	ECQG1H472KZ	0.0047µF	1
	C101	ECQG1H102KZ	0.001µF	1
	C102	ECQG1H472KZ	0.0047µF	1
	C103	ECQG1H102KZ	0.001µF	1
	C104	ECQG1H472KZ	0.0047µF	1
	C105	ECQG1H102KZ	0.001µF	1
	C106	ECQG1H472KZ	0.0047µF	1
	C107	ECQG1H102KZ	0.001µF	1
	C108	ECQG1H472KZ	0.0047µF	1
	C109	ECQG1H102KZ	0.001µF	1
	C110	ECCR1H471J	470pF	1
	C112	ECQV1H104JZ	0.1µF	1
○	C113	ECRR1H104ZF	0.1µF	1
	C114	ECKR1E473ZV	0.047µF	1
	C115	ECCR1H221J	220pF	1
	C116	ECEA0JU101	100µF, 6.3V	1
	C117	ECKR1E473ZV	0.047µF	1
	C119	ECQG1H472KZ	0.0047µF	1
	C120	ECQG1H102KZ	0.001µF	1
	C121	ECQG1H472KZ	0.0047µF	1
	C122	ECQG1H102KZ	0.001µF	1
	C123	ECQG1H472KZ	0.0047µF	1
	C124	ECQG1H102KZ	0.001µF	1
	C125	ECQG1H472KZ	0.0047µF	1
	C126	ECQG1H102KZ	0.001µF	1
	C127	ECQG1H472KZ	0.0047µF	1
	C128	ECQG1H102KZ	0.001µF	1
	C129	ECQG1H472KZ	0.0047µF	1
	C130	ECQG1H102KZ	0.001µF	1
	C131	ECQG1H472KZ	0.0047µF	1
	C132	ECQG1H102KZ	0.001µF	1
	C133	ECQG1H472KZ	0.0047µF	1
	C134	ECQG1H102KZ	0.001µF	1
	C136	ECQG1H332KZ	0.0033µF	1
	C137	ECEA1HU010	1µF, 50V	1
	C140	ECQG1H332KZ	0.0033µF	1
	C144	ECQG1H152KZ	0.0015µF	1
	C148	ECQG1H152KZ	0.0015µF	1
	C152	ECQG1H152KZ	0.0015µF	1
	C156	ECQG1H152KZ	0.0015µF	1
	C158	ECQV1H104JZ	0.1µF	1
	C159	ECCR1H221J	220pF	1
	C160, 161	ECCR1H681J	680pF	2
	C200	ECQG1H332KZ	0.0033µF	1
	C201~220	ECKR1E473ZV	0.047µF	20
	C221, 222	ECEA0JU470	47µF, 6.3V	2
	C223	ECKR1E473ZV	0.047µF	1
	C225, 226	ECKR1E473ZV	0.047µF	2
	C229, 230	ECEA0JU101	100µF, 6.3V	2

SG SOUND GENERATOR CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGM74LS137	Decoder	1
○ IC2	SVIGU3C04159	4M bit Mask ROM	1
IC3, 18, 31	MN6635	Digital Sound Processor	3
IC4, 19, 32	SVIGBA9221	12 bit D-A Converter	3
IC5, 20, 33	SVIGM5238L	Operational Amplifier	3
IC6, 21, 34	SVIGT74H4051	8-channel Multiplexer	3
IC7~10, 22~25, 35~38	SVIGM74H4066	Quad Bilateral Switches	12
IC15, 43, 44	SVIGM5218L	Operational Amplifier	3
IC16	MN40174B	D-type Flip-Flop (Latch)	1
○ IC17	SVIGU3C04160	4M bit Mask ROM	1
○ IC30 IC1	SVIGU3C04163	4M bit Mask ROM	1
IC2	SVIGU3C04164	4M bit Mask ROM	1
TRANSISTOR			
Q1	2SC1047C		1
OSCILLATORS			
X1, 2	SVQG49S1600T	16MHz, Quartz Oscillator	2
COMPONENT COMBINATIONS			
Z1~3	EXKS14Z2073	1KΩ/2KΩ, Ladder Network	3
RESISTORS			
R1	ERDS2TJ103	10KΩ	1
R2	ERDS2TJ102	1KΩ	1
R3	ERDS2TJ472	4.7KΩ	1
R4, 5	ER0S2CKF4700	470Ω, ±1%	2
R6, 7	ERDS2TJ471	470Ω	2
R8	ERDS2TJ123	12KΩ	1
R9, 10	ER0S2CKF4700	470Ω, ±1%	2
R11, 12	ERDS2TJ471	470Ω	2
R13	ERDS2TJ123	12KΩ	1
R14, 15	ER0S2CKF4700	470Ω, ±1%	2
R16, 17	ERDS2TJ471	470Ω	2
R18	ERDS2TJ123	12KΩ	1
R19	ERDS2TJ151	150Ω	1
R20, 21	ERDS2TJ331	330Ω	2
R22	ERDS2TJ473	47KΩ	1
R23	ERDS2TJ151	150Ω	1
R24, 25	ERDS2TJ331	330Ω	2
R26	ERDS2TJ473	47KΩ	1
R27	ERDS2TJ151	150Ω	1
R28, 29	ERDS2TJ331	330Ω	2
R30	ERDS2TJ473	47KΩ	1
R31	ERDS2TJ151	150Ω	1
R32, 33	ERDS2TJ331	330Ω	2
R34	ERDS2TJ473	47KΩ	1
R35	ERDS2TJ151	150Ω	1
R36, 37	ERDS2TJ331	330Ω	2
R38	ERDS2TJ473	47KΩ	1
R39	ERDS2TJ151	150Ω	1
R40, 41	ERDS2TJ331	330Ω	2
R42	ERDS2TJ473	47KΩ	1
R43	ERDS2TJ151	150Ω	1
R44, 45	ERDS2TJ331	330Ω	2
R46	ERDS2TJ473	47KΩ	1
R47	ERDS2TJ151	150Ω	1
R48, 49	ERDS2TJ331	330Ω	2
R50	ERDS2TJ473	47KΩ	1
R51	ERDS2TJ333	33KΩ	1
R52	ERDS2TJ151	150Ω	1
R53, 54	ERDS2TJ331	330Ω	2
R55	ERDS2TJ473	47KΩ	1
R56	ERDS2TJ151	150Ω	1
R57, 58	ERDS2TJ331	330Ω	2
R59	ERDS2TJ473	47KΩ	1
R60	ERDS2TJ151	150Ω	1
R61, 62	ERDS2TJ331	330Ω	2
R63	ERDS2TJ473	47KΩ	1
R64	ERDS2TJ151	150Ω	1
R65, 66	ERDS2TJ331	330Ω	2
R67	ERDS2TJ473	47KΩ	1
R68	ERDS2TJ151	150Ω	1
R69, 70	ERDS2TJ331	330Ω	2
R71	ERDS2TJ473	47KΩ	1
R72	ERDS2TJ151	150Ω	1
R73, 74	ERDS2TJ331	330Ω	2
R75	ERDS2TJ473	47KΩ	1
R76	ERDS2TJ151	150Ω	1
R77, 78	ERDS2TJ331	330Ω	2
R79	ERDS2TJ473	47KΩ	1
R80	ERDS2TJ151	150Ω	1
R81, 82	ERDS2TJ331	330Ω	2
R83	ERDS2TJ473	47KΩ	1
R84	ERDS2TJ333	33KΩ	1
R85	ERDS2TJ151	150Ω	1
R86, 87	ERDS2TJ331	330Ω	2
R88	ERDS2TJ473	47KΩ	1
R89	ERDS2TJ151	150Ω	1
R90, 91	ERDS2TJ331	330Ω	2
R92	ERDS2TJ473	47KΩ	1
R93	ERDS2TJ151	150Ω	1
R94, 95	ERDS2TJ331	330Ω	2
R96	ERDS2TJ473	47KΩ	1
R97	ERDS2TJ151	150Ω	1
R98, 99	ERDS2TJ331	330Ω	2
R100	ERDS2TJ473	47KΩ	1
R101	ERDS2TJ151	150Ω	1
R102, 103	ERDS2TJ331	330Ω	2
R104	ERDS2TJ473	47KΩ	1
R105	ERDS2TJ151	150Ω	1
R106, 107	ERDS2TJ331	330Ω	2
R108	ERDS2TJ473	47KΩ	1
R109	ERDS2TJ151	150Ω	1
R110, 111	ERDS2TJ331	330Ω	2
R112	ERDS2TJ473	47KΩ	1
R113	ERDS2TJ151	150Ω	1
R114, 115	ERDS2TJ331	330Ω	2
R116	ERDS2TJ473	47KΩ	1
R117	ERDS2TJ474	470KΩ	1
R118, 119	ERDS2TJ334	330KΩ	2
R120, 121	ERDS2TJ472	4.7KΩ	2
R122, 123 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
R124 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	1
R125, 126	ERDS2TJ333	33KΩ	2
R127, 128	ERDS2TJ334	330KΩ	2
R130	ERDS2TJ102	1KΩ	1
CAPACITORS			
C1	ECKR1E473ZV	0.047μF	1
C2	ECCR1H101J	100pF	1
C3~7	ECKR1E473ZV	0.047μF	5
C8, 9	ECCR1H220J	22pF	2
C10, 11	ECKR1E473ZV	0.047μF	2
○ C12	ECRR1H104ZF	0.1μF	1
C13	ECKR1E473ZV	0.047μF	1
C14, 15	ECCR1H220J	22pF	2
C16	ECCR1H221J	220pF	1

	Ref. No.	Part No.	Description	Per/Set
	C17	ECEA0JU470	47µF, 6.3V	1
	C18	ECEA0JU102	1000µF, 6.3V	1
	C19	ECCR1H221J	220pF	1
	C20	ECEA0JU470	47µF, 6.3V	1
	C21	ECEA0JU101	100µF, 6.3V	1
	C22	ECCR1H221J	220pF	1
	C23	ECEA0JU470	47µF, 6.3V	1
	C24	ECEA0JU102	1000µF, 6.3V	1
	C25, 26	ECEA1CU101	100µF, 16V	2
	C27	ECEA0JU331	330µF, 6.3V	1
	C29~52	ECQG1H472KZ	0.0047µF	24
	C53~76	ECQG1H102KZ	0.001µF	24
	C77	ECQG1H472KZ	0.0047µF	1
	C79	ECQG1H472KZ	0.0047µF	1
	C80	ECCR1H470J	47pF	1
	C82, 83	ECCR1H471J	470pF	2
	C85	ECEA0JU101	100µF, 6.3V	1
	C86~101	ECKR1E473ZV	0.047µF	16
	C102, 103	ECQG1H102KZ	0.001µF	2
	C104, 105	ECCR1H470J	47pF	2
	C106	ECQG1H102KZ	0.001µF	1

EJ EFFECT, MIXING & JACK CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1~4, 78	MN40174B	D-type Flip-Flop (Latch)	5
	IC5~11, 13	SVIGTC4052BP	Dual 4-channel Maltiplexer	8
	IC12	SVIGTC4053BP	2-channel Multiplexer	1
	IC14~19, 22, 26~29, 38, 40, 42, 44, 46, 47, 49, 60~62, 66~77	SVIGM5218L	Operational Amplifier	33
	IC20, 23, 37, 41, 43, 45	SVIGUPC1252H	VCA	6
	IC21, 39	SVIGUPC1253H	RMS Level Sensor	2
	IC24, 31~33, 50, 51	SVIGMSM4011	2-Input NAND Gate	6
	IC25, 34~36	MN3004	BBD (512 stages)	4
	IC30, 56~59	SVIGLM1894N	Dynamic Noise Reduction	5
	IC52, 53	MN3006	BBD (128 stages)	2
	IC54, 55	SVIGBA6110	VCA	2
	IC63~65	SVIGM5241L	Dual VCA	3
	TRANSISTORS			
	Q1~3, 15~23, 42	2SJ105GR	FET	13
S	Q4, 6~14, 28, 29, 36~39	2SC2320LFG	2SC1310FG	16
S	Q5, 26, 27, 35, 40, 41	2SA1015-GR	2SA933STRS	6
	Q30, 31	2SC3940ARS		2
	Q32, 33	2SA1534ARS		2
	DIODES			
	D1~21	MA165TA5		21
	D23	MA4062	Zener, 6.2V	1
	D24	SVDGRK14		1
	COILS			
	L1~4 **M** **EJ**	SLQG15W34DPQ	Coil	4
	JACKS			
	JK1~8	SJJG400A	AUX IN, LINE OUT, SEPARATED LINE OUT	8
	SWITCHES			
	S1~3	SSSG2002A	Slide Switch	3
	SEMI-FIXED RESISTORS			
	VR2, 3	EVSG0E1B223A	22KΩ B, BBD Bias	2
	RESISTORS			
	R1, 2	ERDS2TJ223	22KΩ	2
	R3	ERDS2TJ273	27KΩ	1
	R4, 5	ERDS2TJ473	47KΩ	2
	R6	ERDS2TJ472	4.7KΩ	1
	R7~9	ERDS2TJ473	47KΩ	3
	R10, 11	ERDS2TJ103	10KΩ	2
	R12, 13	ERDS2TJ223	22KΩ	2
	R14	ERDS2TJ273	27KΩ	1
	R15, 16	ERDS2TJ473	47KΩ	2
	R17	ERDS2TJ472	4.7KΩ	1
	R18~20	ERDS2TJ473	47KΩ	3
	R21	ERDS2TJ103	10KΩ	1
	R23, 24	ERDS2TJ223	22KΩ	2
	R25	ERDS2TJ273	27KΩ	1
	R26, 27	ERDS2TJ473	47KΩ	2
	R28	ERDS2TJ472	4.7KΩ	1
	R29~31	ERDS2TJ473	47KΩ	3
	R32	ERDS2TJ103	10KΩ	1
	R33, 34	ERDS2TJ223	22KΩ	2
	R35	ERDS2TJ273	27KΩ	1
	R36, 37	ERDS2TJ473	47KΩ	2
	R38	ERDS2TJ472	4.7KΩ	1
	R39~41	ERDS2TJ473	47KΩ	3
	R42	ERDS2TJ103	10KΩ	1
	R43, 44	ERDS2TJ223	22KΩ	2
	R45	ERDS2TJ273	27KΩ	1
	R46	ERDS2TJ473	47KΩ	1
	R47	ERDS2TJ223	22KΩ	1
	R48	ERDS2TJ472	4.7KΩ	1
	R49~51	ERDS2TJ473	47KΩ	3
	R52	ERDS2TJ103	10KΩ	1
	R53, 54	ERDS2TJ223	22KΩ	2
	R55	ERDS2TJ273	27KΩ	1
	R56	ERDS2TJ473	47KΩ	1
	R57	ERDS2TJ103	10KΩ	1
	R58	ERDS2TJ472	4.7KΩ	1
	R59	ERDS2TJ332	3.3KΩ	1
	R60	ERDS2TJ154	150KΩ	1
	R61	ERDS2TJ474	470KΩ	1
	R62	ERDS2TJ101	100Ω	1
	R63	ERDS2TJ105	1MΩ	1
	R64	ERDS2TJ100	10Ω	1
	R66	ERDS2TJ223	22KΩ	1
	R68, 69	ERDS2TJ223	22KΩ	2
	R70	ERDS2TJ473	47KΩ	1
	R71	ERDS2TJ105	1MΩ	1
	R72	ERDS2TJ332	3.3KΩ	1
	R73	ERDS2TJ472	4.7KΩ	1
	R74	ERDS2TJ682	6.8KΩ	1
	R75	ERDS2TJ103	10KΩ	1
	R76, 77	ERDS2TJ223	22KΩ	2
	R78	ERDS2TJ103	10KΩ	1
	R80	ERDS2TJ333	33KΩ	1
	R81, 82	ERDS2TJ223	22KΩ	2

Ref. No.	Part No.	Description	Per/Set
R83	ERDS2TJ472	4.7KΩ	1
R84	ERDS2TJ332	3.3KΩ	1
R85	ERDS2TJ154	150KΩ	1
R86, 87	ERDS2TJ332	3.3KΩ	2
R88	ERDS2TJ154	150KΩ	1
R89	ERDS2TJ104	100KΩ	1
R90	ERDS2TJ684	680KΩ	1
R91~93	ERDS2TJ333	33KΩ	3
R94	ERDS2TJ393	39KΩ	1
R95	ERDS2TJ684	680KΩ	1
R96	ERDS2TJ103	10KΩ	1
R97	ERDS2TJ153	15KΩ	1
R98	ERDS2TJ154	150KΩ	1
R99	ERDS2TJ333	33KΩ	1
R100 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R101	ERDS2TJ683	68KΩ	1
R102~104	ERDS2TJ105	1MΩ	3
R105	ERDS2TJ473	47KΩ	1
R106	ERDS2TJ223	22KΩ	1
R107	ERDS2TJ153	15KΩ	1
R108	ERDS2TJ154	150KΩ	1
R109	ERDS2TJ823	82KΩ	1
R110	ERDS2TJ473	47KΩ	1
R111	ERDS2TJ104	100KΩ	1
R112, 113	ERDS2TJ102	1KΩ	2
R114, 115	ERDS2TJ473	47KΩ	2
R116, 117	ERDS2TJ472	4.7KΩ	2
R118, 119	ERDS2TJ331	330Ω	2
R120	ERDS2TJ681	680Ω	1
R121	ERDS2TJ331	330Ω	1
R122~124	ERDS2TJ103	10KΩ	3
R125	ERDS2TJ331	330Ω	1
R126	ERDS2TJ153	15KΩ	1
R127	ERDS2TJ104	100KΩ	1
R128	ERDS2TJ331	330Ω	1
R129	ERDS2TJ153	15KΩ	1
R130	ERDS2TJ104	100KΩ	1
R131	ERDS2TJ331	330Ω	1
R132	ERDS2TJ153	15KΩ	1
R133	ERDS2TJ104	100KΩ	1
R134	ERDS2TJ473	47KΩ	1
R135	ERDS2TJ104	100KΩ	1
R136	ERDS2TJ102	1KΩ	1
R137	ERDS2TJ103	10KΩ	1
R138	ERDS2TJ472	4.7KΩ	1
R139	ERDS2TJ332	3.3KΩ	1
R140	ERDS2TJ154	150KΩ	1
R141	ERDS2TJ474	470KΩ	1
R142	ERDS2TJ101	100Ω	1
R143	ERDS2TJ105	1MΩ	1
R145	ERDS2TJ105	1MΩ	1
R146~148	ERDS2TJ274	270KΩ	3
R149, 150	ERDS2TJ223	22KΩ	2
R151	ERDS2TJ154	150KΩ	1
R152, 153	ERDS2TJ332	3.3KΩ	2
R154, 155	ERDS2TJ154	150KΩ	2
R156	ERDS2TJ153	15KΩ	1
R157, 158	ERDS2TJ104	100KΩ	2
R159	ERDS2TJ333	33KΩ	1
R160	ERDS2TJ103	10KΩ	1
R161	ERDS2TJ332	3.3KΩ	1
R162	ERDS2TJ472	4.7KΩ	1
R163	ERDS2TJ682	6.8KΩ	1
R164	ERDS2TJ154	150KΩ	1
R165	ERDS2TJ473	47KΩ	1
R166	ERDS2TJ332	3.3KΩ	1
R167	ERDS2TJ473	47KΩ	1
R168	ERDS2TJ332	3.3KΩ	1

Ref. No.	Part No.	Description	Per/Set
R169, 170	ERDS2TJ154	150KΩ	2
R171, 172	ERDS2TJ332	3.3KΩ	2
R173, 174	ERDS2TJ154	150KΩ	2
R175	ERDS2TJ153	15KΩ	1
R176	ERDS2TJ103	10KΩ	1
R177	ERDS2TJ154	150KΩ	1
R178	ERDS2TJ153	15KΩ	1
R179	ERDS2TJ103	10KΩ	1
R180	ERDS2TJ333	33KΩ	1
R181, 182 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	2
R183	ERDS2TJ333	33KΩ	1
R184~187	ERDS2TJ104	100KΩ	4
R188	ERDS2TJ332	3.3KΩ	1
R189	ERDS2TJ472	4.7KΩ	1
R190	ERDS2TJ332	3.3KΩ	1
R191	ERDS2TJ472	4.7KΩ	1
R192, 193	ERDS2TJ682	6.8KΩ	2
R194	ERDS2TJ393	39KΩ	1
R195	ERDS2TJ332	3.3KΩ	1
R196	ERDS2TJ222	2.2KΩ	1
R197	ERDS2TJ124	120KΩ	1
R198	ERDS2TJ474	470KΩ	1
R199	ERDS2TJ104	100KΩ	1
R200	ERDS2TJ124	120KΩ	1
R201	ERDS2TJ474	470KΩ	1
R202	ERDS2TJ104	100KΩ	1
R203, 204	ERDS2TJ473	47KΩ	2
R205	ERDS2TJ103	10KΩ	1
R206	ERDS2TJ184	180KΩ	1
R207	ERDS2TJ474	470KΩ	1
R208	ERDS2TJ124	120KΩ	1
R209~211	ERDS2TJ333	33KΩ	3
R212	ERDS2TJ184	180KΩ	1
R213	ERDS2TJ154	150KΩ	1
R214, 215	ERDS2TJ223	22KΩ	2
R216, 217	ERDS2TJ473	47KΩ	2
R218~220	ERDS2TJ104	100KΩ	3
R221	ERDS2TJ333	33KΩ	1
R222 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R223	ERDS2TJ154	150KΩ	1
R224	ERDS2TJ153	15KΩ	1
R225	ERDS2TJ103	10KΩ	1
R226	ERDS2TJ154	150KΩ	1
R227, 228	ERDS2TJ332	3.3KΩ	2
R229, 230	ERDS2TJ154	150KΩ	2
R231, 232	ERDS2TJ332	3.3KΩ	2
R233	ERDS2TJ154	150KΩ	1
R234, 235	ERDS2TJ333	33KΩ	2
R236	ERDS2TJ153	15KΩ	1
R237	ERDS2TJ103	10KΩ	1
R238	ERDS2TJ154	150KΩ	1
R239	ERDS2TJ333	33KΩ	1
R240 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R241~243	ERDS2TJ104	100KΩ	3
R244	ERDS2TJ473	47KΩ	1
R245	ERDS2TJ684	680KΩ	1
R246	ERDS2TJ154	150KΩ	1
R247	ERDS2TJ104	100KΩ	1
R248	ERDS2TJ154	150KΩ	1
R249	ERDS2TJ104	100KΩ	1
R250	ERDS2TJ473	47KΩ	1
R251, 252	ERDS2TJ104	100KΩ	2
R253	ERDS2TJ473	47KΩ	1
R254, 255	ERDS2TJ683	68KΩ	2
R256~259	ERDS2TJ103	10KΩ	4
R260, 261	ERDS2TJ102	1KΩ	2
R262	ERDS2TJ103	10KΩ	1
R263	ERDS2TJ104	100KΩ	1

Ref. No.	Part No.	Description	Per/Set
R264	ERDS2TJ473	47KΩ	1
R265	ERDS2TJ102	1KΩ	1
R267	ERDS2TJ102	1KΩ	1
R268	ERDS2TJ103	10KΩ	1
R269	ERDS2TJ472	4.7KΩ	1
R270	ERDS2TJ331	330Ω	1
R271	ERDS2TJ681	680Ω	1
R272, 273	ERDS2TJ331	330Ω	2
R276	ERDS2TJ472	4.7KΩ	1
R277	ERDS2TJ331	330Ω	1
R278	ERDS2TJ681	680Ω	1
R279	ERDS2TJ331	330Ω	1
R280	ERDS2TJ104	100KΩ	1
R281	ERDS2TJ473	47KΩ	1
R282	ERDS2TJ104	100KΩ	1
R283	ERDS2TJ331	330Ω	1
R285	ERDS2TJ681	680Ω	1
R286	ERDS2TJ331	330Ω	1
R287	ERDS2TJ223	22KΩ	1
R288	ERDS2TJ104	100KΩ	1
R289	ERDS2TJ473	47KΩ	1
R290	ERDS2TJ331	330Ω	1
R291	ERDS2TJ153	15KΩ	1
R292	ERDS2TJ473	47KΩ	1
R293	ERDS2TJ473	47KΩ	1
R294	ERDS2TJ224	220KΩ	1
R295	ERDS2TJ104	100KΩ	1
R296, 297	ERDS2TJ224	220KΩ	2
R298	ERDS2TJ222	2.2KΩ	1
R299	ERDS2TJ154	150KΩ	1
R300	ERDS2TJ334	330KΩ	1
R301	ERDS2TJ154	150KΩ	1
R302	ERDS2TJ473	47KΩ	1
R303	ERDS2TJ683	68KΩ	1
R304	ERDS2TJ101	100Ω	1
R306	ERDS2TJ222	2.2KΩ	1
R307	ERDS2TJ153	15KΩ	1
R308	ERDS2TJ473	47KΩ	1
R309	ERDS2TJ473	47KΩ	1
R310	ERDS2TJ224	220KΩ	1
R311	ERDS2TJ104	100KΩ	1
R312, 313	ERDS2TJ224	220KΩ	2
R314	ERDS2TJ222	2.2KΩ	1
R315	ERDS2TJ104	100KΩ	1
R317	ERDS2TJ104	100KΩ	1
R318	ERDS2TJ101	100Ω	1
R320	ERDS2TJ222	2.2KΩ	1
R321	ERDS2TJ104	100KΩ	1
R322	ERDS2TJ331	330Ω	1
R323	ERDS2TJ681	680Ω	1
R324	ERDS2TJ331	330Ω	1
R327	ERDS2TJ153	15KΩ	1
R328	ERDS2TJ152	1.5KΩ	1
R329	ERDS2TJ473	47KΩ	1
R330, 331	ERDS2TJ474	470KΩ	2
R332	ERDS2TJ104	100KΩ	1
R334	ERDS2TJ224	220KΩ	1
R335	ERDS2TJ222	2.2KΩ	1
R336, 337	ERDS2TJ154	150KΩ	2
R338	ERDS2TJ334	330KΩ	1
R339	ERDS2TJ683	68KΩ	1
R342	ERDS2TJ222	2.2KΩ	1
R343	ERDS2TJ224	220KΩ	1
R344	ERDS2TJ472	4.7KΩ	1
R345~347	ERDS2TJ473	47KΩ	3
R348	ERDS2TJ153	15KΩ	1
R349	ERDS2TJ473	47KΩ	1
R350	ERDS2TJ154	150KΩ	1

Ref. No.	Part No.	Description	Per/Set
R351	ERDS2TJ224	220KΩ	1
R352	ERDS2TJ474	470KΩ	1
R353	ERDS2TJ473	47KΩ	1
R354	ERDS2TJ154	150KΩ	1
R355	ERDS2TJ222	2.2KΩ	1
R356~358	ERDS2TJ154	150KΩ	3
R360	ERDS2TJ222	2.2KΩ	1
R361	ERDS2TJ472	4.7KΩ	1
R362~364	ERDS2TJ473	47KΩ	3
R365	ERDS2TJ153	15KΩ	1
R366	ERDS2TJ154	150KΩ	1
R367	ERDS2TJ224	220KΩ	1
R368	ERDS2TJ474	470KΩ	1
R369	ERDS2TJ473	47KΩ	1
R370	ERDS2TJ154	150KΩ	1
R371	ERDS2TJ222	2.2KΩ	1
R372	ERDS2TJ153	15KΩ	1
R373	ERDS2TJ333	33KΩ	1
R374	ERDS2TJ223	22KΩ	1
R375	ERDS2TJ472	4.7KΩ	1
R376, 377	ERDS2TJ100	10Ω	2
R378, 379	ERDS2TJ472	4.7KΩ	2
R380~382	ERDS2TJ473	47KΩ	3
R383, 384	ERDS2TJ153	15KΩ	2
R385	ERDS2TJ471	470Ω	1
R386	ERDS2TJ473	47KΩ	1
R387	ERDS2TJ152	1.5KΩ	1
R388	ERDS2TJ154	150KΩ	1
R389	ERDS2TJ474	470KΩ	1
R390	ERDS2TJ224	220KΩ	1
R391	ERDS2TJ154	150KΩ	1
R392	ERDS2TJ222	2.2KΩ	1
R393	ERDS2TJ152	1.5KΩ	1
R394	ERDS2TJ333	33KΩ	1
R395	ERDS2TJ153	15KΩ	1
R396	ERDS2TJ223	22KΩ	1
R397	ERDS2TJ472	4.7KΩ	1
R398, 399	ERDS2TJ100	10Ω	2
R400	ERDS2TJ472	4.7KΩ	1
R401	ERDS2TJ154	150KΩ	1
R402	ERDS2TJ473	47KΩ	1
R403	ERDS2TJ154	150KΩ	1
R404	ERDS2TJ222	2.2KΩ	1
R405	ERDS2TJ154	150KΩ	1
R406	ERDS2TJ473	47KΩ	1
R407	ERDS2TJ154	150KΩ	1
R408	ERDS2TJ473	47KΩ	1
R409	ERDS2TJ154	150KΩ	1
R410	ERDS2TJ222	2.2KΩ	1
R411	ERDS2TJ154	150KΩ	1
R412	ERDS2TJ473	47KΩ	1
R413	ERDS2TJ104	100KΩ	1
R414	ERDS2TJ473	47KΩ	1
R415	ERDS2TJ104	100KΩ	1
R416	ERDS2TJ473	47KΩ	1
R417	ERDS2TJ154	150KΩ	1
R418	ERDS2TJ222	2.2KΩ	1
R421	ERDS2TJ222	2.2KΩ	1
R422	ERDS2TJ103	10KΩ	1
R424	ERDS2TJ103	10KΩ	1
R425	ERDS2TJ334	330KΩ	1
R426	ERDS2TJ472	4.7KΩ	1
R427	ERDS2TJ221	220Ω	1
R428	ERDS2TJ222	2.2KΩ	1
R429	ERDS2TJ102	1KΩ	1
R430	ERDS2TJ223	22KΩ	1
R431, 432	ERDS2TJ102	1KΩ	2
R433	ERDS2TJ473	47KΩ	1

Ref. No.	Part No.	Description	Per/Set
R434~436 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	3
R437	ERDS2TJ154	150KΩ	1
R438, 439	ERDS2TJ473	47KΩ	2
R440	ERDS2TJ154	150KΩ	1
R441, 442	ERDS2TJ472	4.7KΩ	2
R443	ERDS2TJ474	470KΩ	1
R444	ERDS2TJ472	4.7KΩ	1
R445	ERDS2TJ222	2.2KΩ	1
R446	ERDS2TJ102	1KΩ	1
R447	ERDS2TJ472	4.7KΩ	1
R448	ERDS2TJ222	2.2KΩ	1
R449	ERDS2TJ102	1KΩ	1
R450, 451	ERDS2TJ472	4.7KΩ	2
R452	ERDS2TJ681	680Ω	1
R453~455	ERDS2TJ332	3.3KΩ	3
R456	ERDS2TJ223	22KΩ	1
R457	ERDS2TJ105	1MΩ	1
R458	ERDS2TJ152	1.5KΩ	1
R459	ERDS2TJ102	1KΩ	1
R460	ERDS2TJ152	1.5KΩ	1
R461	ERDS2TJ102	1KΩ	1
R462	ERDS2TJ152	1.5KΩ	1
R463	ERDS2TJ102	1KΩ	1
R464, 465	ERDS2TJ105	1MΩ	2
R466, 467	ERDS2TJ223	22KΩ	2
R468, 469	ERDS2TJ334	330KΩ	2
R470	ERDS2TJ104	100KΩ	1
R471	ERDS2TJ473	47KΩ	1
R473	ERDS2TJ124	120KΩ	1
R474	ERDS2TJ104	100KΩ	1
R475	ERDS2TJ274	270KΩ	1
R476	ERDS2TJ154	150KΩ	1
R477	ERDS2TJ105	1MΩ	1
R478	ERDS2TJ104	100KΩ	1
R479	ERDS2TJ473	47KΩ	1
R480	ERDS2TJ683	68KΩ	1
R481	ERDS2TJ124	120KΩ	1
R482	ERDS2TJ104	100KΩ	1
R483	ERDS2TJ274	270KΩ	1
R484	ERDS2TJ154	150KΩ	1
R488, 489	ERDS2TJ154	150KΩ	2
R490	ERDS2TJ683	68KΩ	1
R491	ERDS2TJ124	120KΩ	1
R492~494	ERDS2TJ224	220KΩ	3
R496, 497	ERDS2TJ224	220KΩ	2
R498	ERDS2TJ154	150KΩ	1
R499~501	ERDS2TJ474	470KΩ	3
R502, 503	ERDS2TJ334	330KΩ	2
R504	ERDS2TJ103	10KΩ	1
R506	ERDS2TJ471	470Ω	1
R507 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
	CAPACITORS		
C1~3	ECKR1E473ZV	0.047μF	3
C4~6	ECEA1HN010S	1μF, 50V	3
C7	ECKR1E473ZV	0.047μF	1
C8	ECCR1H471J	470pF	1
C9	ECQG1H222KZ	0.0022μF	1
C10, 11	ECCR1H471J	470pF	2
C12	ECCR1H101J	100pF	1
C13	ECCR1H471J	470pF	1
C14	ECQG1H222KZ	0.0022μF	1
C15, 16	ECCR1H471J	470pF	2
C17	ECCR1H101J	100pF	1
C18	ECEA1HN010S	1μF, 50V	1
C19	ECKR1E473ZV	0.047μF	1
C20	ECCR1H471J	470pF	1

Ref. No.	Part No.	Description	Per/Set
C21	ECQG1H222KZ	0.0022μF	1
C22, 23	ECCR1H471J	470pF	2
C24	ECCR1H101J	100pF	1
C25	ECCR1H471J	470pF	1
C26	ECQG1H222KZ	0.0022μF	1
C27, 28	ECCR1H471J	470pF	2
C29	ECCR1H101J	100pF	1
C30	ECEA1HN010S	1μF, 50V	1
C31	ECKR1E473ZV	0.047μF	1
C32	ECQG1H102KZ	0.001μF	1
C33	ECQG1H222KZ	0.0022μF	1
C34, 35	ECCR1H471J	470pF	2
C36	ECCR1H101J	100pF	1
C37~39	ECEA1HN010S	1μF, 50V	3
C40~42	ECKR1E473ZV	0.047μF	3
C43	ECCR1H101J	100pF	1
C44	ECKR1E473ZV	0.047μF	1
C45	ECEA1HN010S	1μF, 50V	1
C46	ECEA1CU101	10μF, 16V	1
C47	ECKR1E473ZV	0.047μF	1
C48	ECEA1HN010S	1μF, 50V	1
C49	ECQG1H102KZ	0.001μF	1
C50	ECQV1H104JZ	0.1μF	1
C51	ECEA1CU100	10μF, 16V	1
C52	ECEA1HU010	1μF, 50V	1
C53	ECCR1H101J	100pF	1
C54	ECQG1H222KZ	0.0022μF	1
C55, 56	ECCR1H101J	100pF	2
C57	ECCR1H681J	680pF	1
C58	ECEA1CU470	47μF, 16V	1
C59	ECEA1HU010	1μF, 50V	1
C60	ECQV1H104JZ	0.1μF	1
C61	ECEA1HN010S	1μF, 50V	1
C62	ECEA1CU100	10μF, 16V	1
C63	ECEA1HU010	1μF, 50V	1
C64	ECEA1CU470	47μF, 16V	1
C65	ECQM1H103KV	0.01μF	1
C66	ECQV1H104JZ	0.1μF	1
C67	ECQG1H102KZ	0.001μF	1
C68	ECQG1H332KZ	0.0033μF	1
C69	ECQV1H104JZ	0.1μF	1
C70	ECEA1CU470	47μF, 16V	1
C71	ECQM1H103KV	0.01μF	1
C72	ECEA1CU100	10μF, 16V	1
C73	ECQV1H473JZ	0.047μF	1
C74	ECQV1H104JZ	0.1μF	1
C75	ECEA1HU010	1μF, 50V	1
C76, 77	ECKR1E473ZV	0.047μF	2
C78~81	ECEA1CU470	47μF, 16V	4
C82~91	ECKR1E473ZV	0.047μF	10
C92~94	ECEA1HU2R2	2.2μF, 50V	3
C95	ECEA1CU100	10μF, 16V	1
C96~98	ECEA1HU2R2	2.2μF, 50V	3
C99	ECEA1HN010S	1μF, 50V	1
C100	ECQG1H102KZ	0.001μF	1
C101	ECQV1H104JZ	0.1μF	1
C102	ECEA1CU100	10μF, 16V	1
C103, 104	ECCR1H101J	100pF	2
C105	ECCR1H681J	680pF	1
C106	ECEA1CU470	47μF, 16V	1
C107	ECCR1H680J	68pF	1
C108	ECCR1H471J	470pF	1
C109	ECEA1HU010	1μF, 50V	1
C110	ECCR1H101J	100pF	1
C111	ECQG1H222KZ	0.0022μF	1
C113, 114	ECCR1H101J	100pF	2
C115	ECCR1H681J	680pF	1
C116	ECEA1CU470	47μF, 16V	1

Ref. No.	Part No.	Description	Per/Set
C117	ECCR1H471J	470pF	1
C118	ECCR1H680J	68pF	1
C119	ECEA1HU010	1µF, 50V	1
C120	ECCR1H101J	100pF	1
C121	ECQG1H222KZ	0.0022µF	1
C122, 123	ECCR1H101J	100pF	2
C124	ECCR1H681J	680pF	1
C125	ECEA1CU470	47µF, 16V	1
C126	ECCR1H471J	470pF	1
C127	ECEA1HU010	1µF, 50V	1
C128	ECCR1H101J	100pF	1
C129	ECQG1H222KZ	0.0022µF	1
C130	ECQV1H474JZ	0.47µF	1
C131	ECQV1H473JZ	0.047µF	1
C132	ECQV1H683JZ	0.068µF	1
C133	ECQG1H682KZ	0.0068µF	1
C136	ECQV1H683JZ	0.068µF	1
C137	ECQM1H103KV	0.01µF	1
C138	ECEA1HU010	1µF, 50V	1
C139	ECEA50ZR22	0.22µF, 50V	1
C140, 141	ECCR1H101J	100pF	2
C142	ECQG1H102KZ	0.001µF	1
C143	ECEA1CU470	47µF, 16V	1
C144	ECQM1H333KV	0.033µF	1
C145	ECCR1H681J	680pF	1
C146	ECCR1H680J	68pF	1
C147	ECEA1HU010	1µF, 50V	1
C148, 149	ECCR1H101J	100pF	2
C150	ECQG1H102KZ	0.001µF	1
C151	ECEA1CU470	47µF, 16V	1
C152	ECQM1H333KV	0.033µF	1
C153	ECCR1H681J	680pF	1
C154	ECCR1H680J	68pF	1
C155	ECEA1HU010	1µF, 50V	1
C156, 157	ECCR1H220J	22pF	2
C158	ECCR1H470J	47pF	1
C159	ECCR1H471J	470pF	1
C160	ECCR1H680J	68pF	1
C161	ECQV1H104JZ	0.1µF	1
C162	ECEA1CU470	47µF, 16V	1
C163	ECQM1H103KV	0.01µF	1
C164	ECQV1H104JZ	0.1µF	1
C165	ECQG1H102KZ	0.001µF	1
C166	ECQV1H104JZ	0.1µF	1
C167	ECQG1H332KZ	0.0033µF	1
C168	ECEA1CU470	47µF, 16V	1
C169, 170	ECKR1E473ZV	0.047µF	2
C171	ECEA1CU100	10µF, 16V	1
C172	ECQV1H473JZ	0.047µF	1
C173	ECEA1HU010	1µF, 50V	1
C174, 175	ECQG1H682KZ	0.0068µF	2
C176	ECEA1HU010	1µF, 50V	1
C177	ECEA1CU470	47µF, 16V	1
C178	ECQM1H103KV	0.01µF	1
C179	ECEA1CU100	10µF, 16V	1
C180	ECQV1H104JZ	0.1µF	1
C181	ECQV1H473JZ	0.047µF	1
C182	ECEA1CU470	47µF, 16V	1
C183	ECQM1H103KV	0.01µF	1
C184	ECQV1H104JZ	0.1µF	1
C185	ECQG1H102KZ	0.001µF	1
C186	ECQG1H332KZ	0.0033µF	1
C187, 188	ECKR1E473ZV	0.047µF	2
C189, 190	ECEA1HN010S	1µF, 50V	2
C191, 192	ECCR1H331J	330pF	2
C193, 194	ECKR1E473ZV	0.047µF	2
C195~197	ECCR1H331J	330pF	3
C198	ECKR1E473ZV	0.047µF	1
C199~201	ECCR1H331J	330pF	3
C202, 203	ECCR1H220J	22pF	2
C204, 205	ECEA1HN010S	1µF, 50V	2
C206	ECCR1H101J	100pF	1
C207	ECEA1HU010	1µF, 50V	1
C208, 209	ECEA1CU331	330µF, 16V	2
C210	ECEA0JU101	100µF, 6.3V	1
C211~215	ECKR1E473ZV	0.047µF	5
C216	ECEA1CU100	10µF, 16V	1
C217	ECEA1HU010	1µF, 50V	1
C218	ECEA1CU100	10µF, 16V	1
C220	ECEA1HU010	1µF, 50V	1
C221~223	ECCR1H220J	22pF	3
C224	ECEA1EU4R7	4.7µF, 25V	1
C225	ECCR1H220J	22pF	1
C226	ECCR1H470J	47pF	1
C227	ECEA1HU010	1µF, 50V	1
C228	ECCR1H151J	150pF	1
C229, 230	ECCR1H471J	470pF	2
C231, 232	ECQG1H222KZ	0.0022µF	2
C233, 234	ECCR1H221J	220pF	2
C235	ECCR1H470J	47pF	1
C236	ECQV1H104JZ	0.1µF	1
C237	ECEA1HU010	1µF, 50V	1
C238	ECKR1E473ZV	0.047µF	1
C239	ECCR1H470J	47pF	1
C240	ECCR1H220J	22pF	1
C242	ECCR1H220J	22pF	1
C243	ECCR1H470J	47pF	1
C244	ECKR1E473ZV	0.047µF	1
C245	ECEA1HU010	1µF, 50V	1
C246	ECQG1H332KZ	0.0033µF	1
C247	ECQG1H102KZ	0.001µF	1
C248	ECQV1H104JZ	0.1µF	1
C249	ECQG1H472KZ	0.0047µF	1
C250, 251	ECEA1CU470	47µF, 16V	2
C252, 253	ECKR1E473ZV	0.047µF	2
C254	ECEA1CU100	10µF, 16V	1
C255	ECQG1H222KZ	0.0022µF	1
C256, 257	ECCR1H221J	220pF	2
C258	ECCR1H470J	47pF	1
C259	ECQV1H104JZ	0.1µF	1
C260	ECEA1HU010	1µF, 50V	1
C261~264	ECCR1H470J	47pF	4
C265	ECEA1HU010	1µF, 50V	1
C266, 267	ECEA1CU470	47µF, 16V	2
C268	ECQG1H472KZ	0.0047µF	1
C269	ECEA1CU100	10µF, 16V	1
C270	ECQV1H473JZ	0.047µF	1
C271	ECQG1H472KZ	0.0047µF	1
C272	ECQV1H104JZ	0.1µF	1
C273	ECQG1H102KZ	0.001µF	1
C274	ECQG1H332KZ	0.0033µF	1
C275, 276	ECEA1HU010	1µF, 50V	2
C277	ECKR1E473ZV	0.047µF	1
C278, 279	ECCR1H470J	47pF	2
C280, 281	ECCR1H220J	22pF	2
C282	ECQG1H472KZ	0.0047µF	1
C283	ECCR1H220J	22pF	1
C285	ECCR1H220J	22pF	1
C287	ECCR1H220J	22pF	1
C289, 290	ECQG1H472KZ	0.0047µF	2
C291	ECQM1H223KV	0.022µF	1
C292	ECEA1HU010	1µF, 50V	1
C293	ECCR1H680J	68pF	1
C294	ECQV1H104JZ	0.1µF	1
C295	ECCR1H470J	47pF	1
C296	ECCR1H220J	22pF	1

	Ref. No.	Part No.	Description	Per/Set
	C297	ECQV1H473JZ	0.047μF	1
	C298, 299	ECEA1HU010	1μF, 50V	2
	C300~302	ECKR1E473ZV	0.047μF	3
	C303	ECEA1HN010S	1μF, 50V	1
	C304~309	ECKR1E473ZV	0.047μF	6
	C310	ECCR1H221J	220pF	1
	C311~318	ECKR1E473ZV	0.047μF	8
	C320	ECEA1HN010S	1μF, 50V	1

DRV DIGITAL REVERB CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
			INTEGRATED CIRCUITS	
	IC2	SVIGM74HC244	3-State Buffer	1
○	IC3	SVIG87064071	Digital Signal Processor	1
○	IC4, 5, 13~20	SVIGM74HC374	3-state D-type Flip-Flop	10
○	IC6, 7	SVIGHM65256	256K bit RAM	2
	IC8	SVIGM74HC138	Decoder	1
○	IC9~12, 24	SVIGM74H164	Shift Register	5
○	IC21~23	SVIGM74H74	Dual D-type Flip-Flops	3
○	IC25, 27	SVIGM74H32	Quad 2-Input OR Gates	2
○	IC26	SVIGM74H08	Quad 2-Input NAND Gates	1
○	IC28	SVIGM74H04	Hex Inverters	1
	IC29	SVIGTC40H004	Hex Inverters	1
	IC30	MN1280R	Reset IC	1
	IC32, 37~39	SVIGM5218L	Operational Amplifier	4
○	IC33	SVIGM5220L	Operational Amplifier	1
○	IC34	MN8305S	A-D Converter	1
○	IC35	SVIGPCM54	D-A Converter	1
	IC36	SVIGM74H4066	Quad Bilateral Switches	1
○	IC41	SVIGM5278L05	+5V Voltage Regulator	1
			DIODES	
	D3, 4	MA165TA5		2
			OSCILLATORS	
○	X1	SVQG49S1228T	12.288MHz, Quartz Oscillator	1
○	X2	SVQG49S2000T	20MHz, Quartz Oscillator	1
			COMPONENT COMBINATION	
	Z1	EXBP88222JM	2.2KΩ×8	1
			SEMI-FIXED RESISTOR	
	VR2	EVSG0E1B223A	22KΩ B, Offset ADJ.	1
			RESISTORS	
	R18, 19	ERDS2TJ473	47KΩ	2
	R20	ERDS2TJ682	6.8KΩ	1
	R21~23	ERDS2TJ473	47KΩ	3
	R24	ERDS2TJ103	10KΩ	1
	R25	ERDS2TJ224	220KΩ	1
	R26	ERDS2TJ103	10KΩ	1
	R27, 28	ERDS2TJ473	47KΩ	2
	R29	ERDS2TJ224	220KΩ	1
	R30	ERDS2TJ183	18KΩ	1
	R31	ERDS2TJ152	1.5KΩ	1
	R32	ERDS2TJ563	56KΩ	1
	R33, 34	ERDS2TJ823	82KΩ	2
	R35, 36 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
	R37, 38 ⚠	ERD2FCG100	10Ω, 1/4W, Fuse Type	2
	R39, 40 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
	R41~43	ERDS2TJ222	2.2KΩ	3
	R44	ERDS2TJ472	4.7KΩ	1
	R45	ERDS2TJ473	47KΩ	1
	R46	ERDS2TJ103	10KΩ	1
	R47	ERDS2TJ334	330KΩ	1
	R48	ERDS2TJ473	47KΩ	1
	R49	ERDS2TJ103	10KΩ	1
	R50	ERDS2TJ334	330KΩ	1
	R51	ERDS2TJ682	6.8KΩ	1
	R52~54	ERDS2TJ473	47KΩ	3
	R55	ERDS2TJ682	6.8KΩ	1
	R56~58	ERDS2TJ473	47KΩ	3
	R59	ERDS2TJ682	6.8KΩ	1
	R60~62	ERDS2TJ473	47KΩ	3
	R63	ERDS2TJ682	6.8KΩ	1
	R64~66	ERDS2TJ473	47KΩ	3
	R71	ERDS2TJ151	150Ω	1
	R72	ERDS2TJ105	1MΩ	1
			CAPACITORS	
	C12, 13	ECQM1H153KV	0.015μF	2
	C14	ECQG1H472KZ	0.0047μF	1
	C15, 16	ECCR1H471J	470pF	2
	C17	ECCR1H101J	100pF	1
	C18	ECEA50M1R	1μF, 50V	1
	C19	ECEA1CN100S	10μF, 16V	1
	C20	ECEA50M1R	1μF, 50V	1
	C21	ECQG1H472KZ	0.0047μF	1
	C22	ECCR1H471J	470pF	1
	C23	ECEA0JU101	100μF, 6.3V	1
	C24	ECEA0JU221	220μF, 6.3V	1
	C25	ECEA0JU331	330μF, 6.3V	1
	C26	ECKR1E473ZV	0.047μF	1
	C27, 28	ECEA1CU101	100μF, 16V	2
	C29, 30	ECEA1CU470	47μF, 16V	2
	C31, 32	ECEA1HU010	1μF, 50V	2
	C33	ECCR1H101J	100pF	1
	C34	ECEA1HU010	1μF, 50V	1
	C35	ECCR1H101J	100pF	1
	C36	ECQG1H472KZ	0.0047μF	1
	C37, 38	ECCR1H471J	470pF	2
	C39	ECCR1H101J	100pF	1
	C40	ECQG1H472KZ	0.0047μF	1
	C41, 42	ECCR1H471J	470pF	2
	C43	ECCR1H101J	100pF	1
	C44	ECQG1H472KZ	0.0047μF	1
	C45, 46	ECCR1H471J	470pF	2
	C47	ECCR1H101J	100pF	1
	C48	ECQG1H472KZ	0.0047μF	1
	C49, 50	ECCR1H471J	470pF	2
	C51	ECCR1H101J	100pF	1
	C64, 65	ECEA1CU470	47μF, 16V	2
	C66~69	ECCR1H220J	22pF	4
	C70	ECEA0JU101	100μF, 6.3V	1
	C72~74	ECKR1E473ZV	0.047μF	3
	C76, 77	ECKR1E473ZV	0.047μF	2
	C79	ECKR1E473ZV	0.047μF	1
	C82	ECKR1E473ZV	0.047μF	1
	C84	ECKR1E473ZV	0.047μF	1
	C87, 88	ECKR1E473ZV	0.047μF	2
	C90~94	ECKR1E473ZV	0.047μF	5
	C96~98	ECKR1E473ZV	0.047μF	3
	C99	ECEA1CU100	10μF, 16V	1
	C100	ECCR1H101J	100pF	1

MKB 1 MANUAL KEYBOARD 1 CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1	SVIGM74LS138	Decoder	1
	DIODES			
S	D25~61	MA162A	MA150IR	37
	SWITCHES			
	S25~54	SSPG6001A	Rubber Switch (6 continuous)	5
	S55~61	SSPG7001A	Rubber Switch (7 continuous)	1
	CAPACITORS			
	C1	ECKR1E473ZV	0.047μF	1

MKB 3 MANUAL KEYBOARD 3 CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	DIODES			
S	D13~24	MA162A	MA150IR	12
	SWITCHES			
	S13~24	SSPG6001A	Rubber Switch (6 continuous)	2

PKB PEDAL KEYBOARD CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	DIODES			
S	D1~16	MA162A	MA150IR	16
	SWITCHES			
	S1~14	SHGG50A	Rubber Switch (5 continuous)	3

EXP EXPRESSION CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	Cds			
	CS1	SVEG5	Light Sensitive Device	1

ACP AC POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	LINE FILTERS			
	L1 ⚠	SLTGLF5	Line Filter	1
	L2 ⚠	SLTGLF4	Line Filter	1
	VOLTAGE SELECTOR			
	S1 [EK] [XS] ⚠ [XL] [XR] [X]	ESE37209	Voltage Selector	1
	FUSES			
	F1 [EK] [XS] ⚠ [XL] [XR] [X]	XBA2C31TB0	T3.15A, 250V	1
	F1 [M] [MC] ⚠	XBA1C63NU100	6.3A, 125V	1
	F2 ⚠	XBA2C16TB0	T1.6A, 250V, European areas	1
	CAPACITORS			
	C1 ⚠	ECKCVA1472MF	4700pF, Line-Capasitor	1
	C2 ⚠	ECQU2A104MN	0.1μF, Across-the Line Capasitor	1

PS POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUIT			
	IC1	SVIGM5291P	Switching Regulator	1
	TRANSISTORS			
S	Q1, 2	2SC2320LFG	2SC1310FG	2
	Q3	2SB953AQP		1
	Q4	2SD1277A		1
	Q5	2SB951A		1
	Q6, 7	2SJ105GR		2
	DIODES			
	D1~4 ⚠	SVDGERA1502Y	Rectifier	4
	D5, 6 ⚠	SVDS2V20	Rectifier	2
	D7	MA165TA5		1
	D8	SVDGERC9102		1
	D9	MA2062LF	Zener, 6.2V	1
	D10, 11	MA4160	Zener, 16, 0V	2
	COIL			
	L1	SLCG3A121T	Coil	1
	FUSES			
	F3 [M] [MC] ⚠	XBA1C31NU100	3.15A, 125V	1
	F5 ⚠	XBA2C31TB0	T3.15A, 250V, Except for [M] & [MC]	1
	RESISTORS			
	R1~3	ERDS2TJ103	10KΩ	3
	R4	ERDS2TJ471	470Ω	1
	R5, 6	ERDS2TJ473	47KΩ	2
	R7	ERDS2TJ104	100KΩ	1
	R8	ERDS2TJ472	4.7KΩ	1
	R9, 10 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	2

Ref. No.	Part No.	Description	Per/Set
R11 ⚠	ERX1ANJR22	0.22Ω, 1W, Flame-Proof	1
R12	ERDS2TJ681	680Ω	1
R13	ERDS2TJ152	1.5KΩ	1
R14	ERDS2TJ101	100Ω	1
R15 ⚠	ERG1ANJP391S	390Ω, 1W, Flame-Proof	1
R16	ERDS2TJ332	3.3KΩ	1
R17	ERDS2TJ102	1KΩ	1
R18, 19 ⚠	ERQ12HKR47	0.47Ω, 1/2W, Fuse Type	2
CAPACITORS			
C1	ECEA1EU4R7	4.7μF, 25V	1
C2	ECQV1H104JZ	0.1μF	1
C3	ECEA1VU100	10μF, 35V	1
C4	ECCR1H471J	470pF	1
C5	ECEA0JU222	2200μF, 6.3V	1
C6	ECKR1E473ZV	0.047μF	1
C7	ECEA1VU100	10μF, 35V	1
C8	ECEA1HN010S	1μF, 50V	1
C9	ECEA1VU332	3300μF, 35V	1
C11	ECEA1VU222	2200μF, 35V	1
C12	ECEA1VU100	10μF, 35V	1
C13	ECEA1HU010	1μF, 50V	1
C14	ECEA0JU222	2200μF, 6.3V	1

PA POWER AMPLIFIER CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUIT			
IC1	SVIGS4221M2M	Power Amplifier	1
DIODES			
D1, 2, 4, 5, ⚠ 8, 9, 11, 12	SVDS3V20	Rectifier	8
RESISTORS			
R1	ERDS2TJ273	27KΩ	1
R2	ERDS2TJ153	15KΩ	1
R3	ERDS2TJ222	2.2KΩ	1
R4	ERDS2TJ393	39KΩ	1
R5	ERDS2TJ472	4.7KΩ	1
R6, 7	ERDS2TJ222	2.2KΩ	2
R8	ERDS2TJ224	220KΩ	1
R9	ERDS2TJ103	10KΩ	1
R11	ERDS2TJ681	680Ω	1
R12, 13	ERDS2TJ102	1KΩ	2
R14 ⚠	ERD50FJ4R7	4.7Ω, 1/2W, Flame-Proof	1
R15 ⚠	ERD2FCG101	100Ω, 1/4W, Fuse Type	1
R17, 18	ERDS2TJ222	2.2KΩ	2
R19	ERDS2TJ472	4.7KΩ	1
R20	ERDS2TJ393	39KΩ	1
R21	ERDS2TJ222	2.2KΩ	1
R23	ERDS2TJ153	15KΩ	1
R24	ERDS2TJ273	27KΩ	1
R41 ⚠	ERD50FJ4R7	4.7Ω, 1/2W, Flame-Proof	1
CAPACITORS			
C1	ECEA1HN010S	1μF, 50V	1
C2	ECCR1H221J	220pF	1
C3	ECEA1EU100	10μF, 25V	1
C4	ECEA1HU470	47μF, 50V	1

Ref. No.	Part No.	Description	Per/Set
C5	ECEA1HU4R7	4.7μF, 50V	1
C6	ECQV1H104JZ	0.1μF	1
C7	ECEA1HU470	47μF, 50V	1
C9	ECEA1HU470	47μF, 50V	1
C10	ECEA1EU100	10μF, 25V	1
C11	ECCR1H221J	220pF	1
C12	ECEA1HN010S	1μF, 50V	1
C13	ECES1HU472H	4700μF, 50V	1
C14, 15	ECEA50Y1	1μF, 50V	2
C21	ECQV1H104JZ	0.1μF	1
C23	ECQV1H104JZ	0.1μF	1
C29	ECES1HU472H	4700μF, 50V	1
C30	ECQE2A104MW	0.1μF	1

NW NETWORK CIRCUIT

Ref. No.	Part No.	Description	Per/Set
COILS			
L1, 2	SLCSC472JU	4.7mH	2

CPL UPPER CONTROL PANEL LEFT CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	MN15524PGY	1 chip 4 bit Microcomputer	1
IC2~5	SVIGM74LS07	Hex Buffers (O.C.)	4
IC6	MN1280R	Reset IC	1
TRANSISTORS			
Q1~4	2SA830SB		4
Q5	2SC1047C		1
S Q6	2SC2320LFG	2SC1310FG	1
DIODES			
D3~35, 37~41, 44, 46~70, 72~76	MA165TA5		69
D79~110, 112~115, 118, 120~139, 141~144	SVDGSEL4117R	LED (red)	61
OSCILLATOR			
X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
SWITCHES			
S3~35, 37~41, 44, 46~58, 60~70, 72~76	SSHG1045A	Push switch	68

	Ref. No.	Part No.	Description	Per/Set
	RESISTORS			
	R1	ERDS2TJ222	2.2KΩ	1
	R2~6	ERDS2TJ103	10KΩ	5
	R7~10	ERDS2TJ152	1.5KΩ	4
	R11~32	ERDS2TJ470	47Ω	22
	R33, 34	ERDS2TJ472	4.7KΩ	2
	R35	ERDS2TJ222	2.2KΩ	1
	R38~59	ERDS2TJ152	1.5KΩ	22
	CAPACITORS			
	C1	ECEA0JK470	47μF, 6.3V	1
○	C2	ECRR1H104ZF	0.1μF	1
	C3	ECCR1H471J	470pF	1
○	C4~8	ECRR1H104ZF	0.1μF	5

JACK JACK CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUIT			
	IC1	SVIGM5218L	Operational Amplifier	1
	COILS			
	L1, 3	SLQG15W34DPQ	Coil	2
	L2	SLQG15W24DPQ	Coil	1
	JACKS			
	JK1, 2	SJJG470A	Line Out	1
	JK3	SJJG210A	Mic	1
	JK4	SJJG100A	Headphones	1
	VARIABLE RESISTOR			
	VR1	EWHD5A576A54	500KΩ A, Mic Volume	1
	RESISTORS			
	R1, 2 ⚠	ERD2FCG100	10Ω, 1/4W, Fuse Type	2
	R3	ERDS2TJ472	4.7KΩ	1
	R4	ERDS2TJ102	1KΩ	1
	R5	ERDS2TJ222	2.2KΩ	1
	R6	ERDS2TJ102	1KΩ	1
	R7	ERDS2TJ472	4.7KΩ	1
	R8	ERDS2TJ222	2.2KΩ	1
	R9	ERDS2TJ224	220KΩ	1
	R10	ERDS2TJ103	10KΩ	1
	R11	ERDS2TJ224	220KΩ	1
	R12	ERDS2TJ103	10KΩ	1
	R13	ERDS2TJ154	150KΩ	1
	R14	ERDS2TJ102	1KΩ	1
	R15, 16 ⚠	ERG1ANJP680S	68Ω, 1W, Flame-Proof	2
	R17~19	ERDS2TJ102	1KΩ	3
	CAPACITORS			
	C1, 2	ECEA1EU470	47μF, 25V	2
	C3	ECEA1HN010S	1μF, 50V	1
	C4, 5	ECCR1H101J	100pF	2
	C6, 7	ECKR1E473ZV	0.047μF	2
	C8	ECEA1HN010S	1μF, 50V	1

CPC UPPER CONTROL PANEL CENTER CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1	MN15524PGY	1 chip 4 bit Microcomputer	1
	IC2	MN1280R	Reset IC	1
	IC3~6	SVIGM74LS07	Hex Buffers (O.C.)	4
○	IC10	SVIGUPD7225	LCD Driver	1
	TRANSISTORS			
	Q1~4	2SA830SB		4
	Q5	2SC1047C		1
S	Q6~8	2SC2320LFG	2SC1310FG	3
	DIODES			
	D1~4, 7, 8, 11, 13~55, 58~71, 73~77, 151	MA165TA5		70
	D78~81, 84, 85, 88, 90~128, 134~144, 149, 150	SVDGSEL4117R	LED (red)	59
	D131~133, 145~148	SVDGSEL4417G	LED (green)	7
	LCD DISPLAY			
○	LCD1	SXEG101A	LCD Display	1
	OSCILLATOR			
	X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
	SWITCHES			
	S1~4, 7, 8, 11~55, 58~77	SSHG1045A	Push switch	71
	RESISTORS			
	R1	ERDS2TJ222	2.2KΩ	1
	R2	ERDS2TJ472	4.7KΩ	1
	R3	ERDS2TJ103	10KΩ	1
	R4	ERDS2TJ472	4.7KΩ	1
	R5	ERDS2TJ222	2.2KΩ	1
	R6~9	ERDS2TJ103	10KΩ	4
	R10~13	ERDS2TJ152	1.5KΩ	4
	R14~35	ERDS2TJ470	47Ω	22
	R36~57	ERDS2TJ152	1.5KΩ	22
	R58	ERDS2TJ103	10KΩ	1
	R59	ERDS2TJ104	100KΩ	1
	R60~62	ERDS2TJ472	4.7KΩ	3
	R64	ERDS2TJ184	180KΩ	1
	CAPACITORS			
○	C1	ECRR1H104ZF	0.1μF	1
	C2	ECCR1H471J	470pF	1
○	C3~7	ECRR1H104ZF	0.1μF	5
	C8	ECEA0JK470	47μF, 6.3V	1

CPR UPPER CONTROL PANEL RIGHT CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1	MN15524PGY	1 chip 4 bit Microcomputer	1
	IC2	MN1280R	Reset IC	1
	IC3~5	SVIGM74LS07	Hex Buffers (O.C.)	3
	TRANSISTORS			
	Q1~4	2SA830SB		4
	Q5	2SC1047C		1
S	Q6	2SC2320LFG	2SC1310FG	1
	DIODES			
	D1~6, 11~16, 20~35, 38, 39, 41, 45~48, 52~67	MA165TA5		51
	D68~71, 76~81, 85~100, 103, 104, 110~113, 117~132	SVDGSEL4117R	LED (red)	48
	D106	SVDGSEL4417G	LED (green)	1
	OSCILLATOR			
	X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
	SWITCHES			
	S3~6, 11~16, 20~35, 38, 39, 41, 45~48, 52~67	SSHG1045A	Push switch	49
	RESISTORS			
	R1	ERDS2TJ222	2.2KΩ	1
	R2	ERDS2TJ472	4.7KΩ	1
	R3	ERDS2TJ103	10KΩ	1
	R4	ERDS2TJ222	2.2KΩ	1
	R5~8	ERDS2TJ152	1.5KΩ	4
	R9~26	ERDS2TJ470	47Ω	18
	R27~46	ERDS2TJ152	1.5KΩ	20
	R47~50	ERDS2TJ103	10KΩ	4
	R51	ERDS2TJ472	4.7KΩ	1
	CAPACITORS			
	C1	ECEA0JK470	47μF, 6.3V	1
○	C2	ECRR1H104ZF	0.1μF	1
	C3	ECCR1H471J	470pF	1
○	C4~6	ECRR1H104ZF	0.1μF	3

CPSL LOWER CONTROL PANEL LEFT CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1	MN15524PGY	1 chip 4 bit Microcomputer	1
	IC2, 3	SVIGM74LS07	Hex Buffers (O.C.)	2
○	IC4	SVIGUPD7225	LCD Driver	1
	IC5	MN1280R	Reset IC	1
	TRANSISTORS			
	Q1~4	2SA830SB		4
	Q5	2SC1047C		1
S	Q6, 9, 10	2SC2320LFG	2SC1310FG	3
S	Q7, 8	2SA1015-GR	2SA933STRS	2
	DIODES			
	D1~67	MA165TA5		67
	D68~71, 76~80, 82~85, 87, 88, 91, 92, 95, 99~101, 104~110, 116~118	SVDGSEL4117R	LED (red)	31
	D72~75, 81, 86, 89, 90, 93, 94, 96~98, 102, 103, 111~114	SVDGSEL4417G	LED (green)	19
	LCD DISPLAY			
○	LCD1	SXEG110A	LCD Display	1
	OSCILLATOR			
	X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
	COMPONENT COMBINATIONS			
	Z1	EXBP86152JM	1.5KΩ×6	1
	Z2	EXBP84152JM	1.5KΩ×4	1
	SWITCHES			
	S1~69	SSHG1045A	Push switch	69
	LAMPS			
○	LP1~6	XAMG6P	8V, 150mA	6
	VARIABLE RESISTORS			
	VR1, 2	EVD06510B24G	20KΩ B, Tempo Control, Main Volume	2
	RESISTORS			
	R1	ERDS2TJ222	2.2KΩ	1
	R2	ERDS2TJ472	4.7KΩ	1
	R3	ERDS2TJ103	10KΩ	1
	R4	ERDS2TJ222	2.2KΩ	1
	R5	ERDS2TJ472	4.7KΩ	1
	R6, 7	ERDS2TJ103	10KΩ	2
	R8, 9	ERDS2TJ152	1.5KΩ	2
	R10~13	ERDS2TJ470	47Ω	4
	R18, 19	ERDS2TJ330	33Ω	2
	R20~27	ERDS2TJ470	47Ω	8
	R28~39	ERDS2TJ152	1.5KΩ	12

	Ref. No.	Part No.	Description	Per/Set
	R44	ERDS2TJ103	10KΩ	1
	R45	ERDS2TJ104	100KΩ	1
	R46	ERDS2TJ184	180KΩ	1
	CAPACITORS			
○	C1, 2	ECRR1H104ZF	0.1μF	2
○	C5	ECRR1H104ZF	0.1μF	1
	C6	ECEA0JK470	47μF, 6.3V	1
	C7	ECCR1H471J	470pF	1

FDCU FD CONTROL UPPER CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC2	SVIGM74LS05	Hex Inverters (O.C.)	1
	IC3	SVIGTC40H004	Hex Inverters	1
	IC6	SVIGM74LS393	4 bit Binary Counter	1
	IC7	SVIGM5W17930	FD Formatter/Controller	1
	IC8	SVIGM74LS193	Up/Down Counter	1
	OSCILLATOR			
	X1	SVQG49S8000T	8MHz, Quartz Oscillator	1
	COMPONENT COMBINATION			
	Z1	EXBP88102JM	1KΩ×8	1
	RESISTORS			
	R2	ERDS2TJ105	1MΩ	1
	R4	ERDS2TJ103	10KΩ	1
	CAPACITORS			
○	C6	ECRR1H104ZF	0.1μF	1
	C7	ECCR1H101J	100pF	1
	C8	ECCR1H330J	33pF	1
	C9	ECCR1H220J	22pF	1
○	C14, 15	ECRR1H104ZF	0.1μF	2
○	C16	ECEA1CX470	47μF, 16V	1
○	C17	ECRR1H104ZF	0.1μF	1

FDCL FD CONTROL LOWER CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1	MN15621PGL	1 chip 4 bit Microcomputer	1
	IC4	SVIGM51953A	Reset IC	1
○	IC5	SVIGD4364X15	64K bit RAM	1
	TRANSISTORS			
	Q1	2SC1047C		1
S	Q2	2SC2320LFG	2SC1310FG	1

	Ref. No.	Part No.	Description	Per/Set
	DIODE			
	D1	MA165TA5		1
	OSCILLATOR			
○	X2	EF0FC4504A5	4.5MHz, Ceramic Oscillator	1
	RESISTORS			
	R1	ERDS2TJ472	4.7KΩ	1
	R3	ERDS2TJ103	10KΩ	1
	R5	ERDS2TJ681	680Ω	1
	R6	ERDS2TJ102	1KΩ	1
	R7	ERDS2TJ222	2.2KΩ	1
	CAPACITORS			
○	C3	ECEA1HXR33	0.33μF, 50V	1
○	C4	ECRR1H104ZF	0.1μF	1
	C5	ECCR1H471J	470pF	1
○	C10	ECEA1HXR33	0.33μF, 50V	1
○	C11, 12	ECEA1CX470	47μF, 16V	2
○	C13	ECEA1HXR33	0.33μF, 50V	1

■ WIRING PARTS (see wiring diagram on page II-1, II-2)

	Ref. No.	Part No.	Description	Per/Set
○	W1	SWKG08111LSA	Connector, with Wire	1
○	W2	SWKG06120SSA	Connector, with Wire	1
○	W3	SWKG04139ZA	Connector, with Wire	1
○	W4	SWKG03110SSA	Connector, with Wire	1
○	W5	SWKG114SSA	Connector, with Wire	1
○	W6	SWKG126SSA	Connector, with Wire	1
	W7, 9	SWKG1410SSA	Connector, with Wire	2
○	W8	SWKG0535SSA	Connector, with Wire	1
	W10	SWKG1074SSA	Connector, with Wire	1
○	W11	SWKG1346ZA	Connector, with Wire	1
○	W12	SWKG1347ZA	Connector, with Wire	1
○	W13	SWKG04137LSA	Connector, with Wire	1
○	W14	SWKG06126ZA	Connector, with Wire	1
○	W15	SWKG06122SSB	Connector, with Wire	1
○	W16	SWKG079SSA	Connector, with Wire	1
○	W17	SWKG1081ZA	Connector, with Wire	1
○	W18	SWKG0523SSA	Connector, with Wire	1
○	W19	SWKG03111SSA	Connector, with Wire	1
○	W20	SWKG127SSA	Connector, with Wire	1
○	W21	SWKG1084LSA	Connector, with Wire	1
○	W22	SWKG03109ZB	Connector, with Wire	1
○	W23	SWKG04136LSA	Connector, with Wire	1
○	W24	SWKG03112ZA	Connector, with Wire	1
○	W25	SWKG1517STA	Connector, with Wire	1
○	W26	SWKG1515SSA	Connector, with Wire	1
○	W27	SWKG1082LSA	Connector, with Wire	1
○	W28	SWKG06121ZB	Connector, with Wire	1
○	W29	SWKG04138LSA	Connector, with Wire	1
	W30	SWKG04115LTA	Connector, with Wire	1

REPLACEMENT PARTS LIST......Cabinet and Chassis Parts

Notes:

1. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. ○ mark are new parts.
3. For part No. with area mark, check the area when placing an order.
4. Cabinet parts number of [M] mark is indicate the deluxe cabinet.

■ CABINET PARTS

POWER SWITCH

Ref. No.	Part No.	Description	Per/Set
S1 ⚠	ESB90712V	Power Switch	1

SPEAKER

Ref. No.	Part No.	Description	Per/Set
○ SP1	EAS30PL132F	30cm, 16Ω	1
○ SP2, 4	EAS20PL255C	20cm, 8Ω	2
○ SP5, 6	EAS8HH62A	Horn Tweeter, 16Ω	2

POWER TRANSFORMER

Ref. No.	Part No.	Description	Per/Set
○ T1 ⚠	SLTG5S24	Power Transformer	1
○ T1 [M] [MC] ⚠	SLTG5S23	Power Transformer	1

POWER INDICATOR

Ref. No.	Part No.	Description	Per/Set
D1	LN29RP	LED, Power Indicator	1

POWER CORD, PLUG

Ref. No.	Part No.	Description	Per/Set
PC1 ⚠ [M] [MC]	SJAG22	Power Cord	1
PC1 ⚠ [XL] [XR]	SJAG23	Power Cord	1
PC1 ⚠ [EK] [XS]	SJAG25	Power Cord	1
PC1 ⚠	SJAG24	Power Cord European and Asia areas	1
PC2 [X] ⚠	SJP5213-1	Attachment Plug	1

CABINET & OTHERS

Ref. No.	Part No.	Description	Per/Set
1	SKGG1B110C	Clear Panel, Music Rack	1
2	SGXG2360A	Ornament	1
3	SBLG230A	Stay	2
○ 4	SHRGA7210A	Felt	3
○ 5	SKPG990A	Top Cover Ass'y	1
○ 5-1	SGXG2841A	Ornament	1
○ 5-2	SHRG8350A	Cap, Left Side	1
○ 5-3	SHRG8360A	Cap, Right Side	1
5-4	SGBG150A	Technics Badge	1
5-5	SUWG1140A	Bracket	2
○ 6 [M]	SKGG1B190A	Clear Panel	1
○ 7 [M]	SKGG1E120A	Ornament	1
8 [M]	SBLG250A	Stay	2
○ 9 [M]	SKPG1010A	Top Cover	1
○ 10	SKZG8450A	Sliding Cover Ass'y	1
○ 10 [M]	SKZG8490A	Sliding Cover Ass'y	1
○ 10-1	SGXG418A	Ornament	1
○ 10-1 [M]	SGXG3010A	Ornament	1
10-2	SBEG30A	Lock	1
10-3	SBEG40C	Staple	1
10-3 [M]	SBEG40A	Staple	1
10-4	SBHG6007-1	Hinge	3
○ 10-5	SHRG9930A	Catch, Guide Rail	10
○ 10-6	SHSG3500A	Felt	2
10-7	SHSG119	Felt	4
10-8	SHSG146-1	Felt	2
11	SBEG60A	Key	1
○ 12	SGXG2920A	Ornament	1
○ 13	SHSG3560A	Felt	2
○ 14	SGWG1901B	Upper Control Panel Ass'y	1
○ 15	SGUG30A	Display Cover Panel	1
○ 16	SHSG5810A	Felt	1
○ 17	SHSG5800A	Felt	1
○ 18	SGWG8210B	Lower Control Panel, Left	1
○ 19	SGUG40A	Display Cover Panel	1
○ 20	SHSG5770A	Felt	1
○ 21	SGWG8220B	Lower Control Panel, Right	1
○ 22	SHSG5780A	Felt	1
○ 23	SGXG2880A	Ornament, Keyboard	1
○ 24	SMKG3302A	Jack Panel	1
○ 25	SUWG3000A	Bracket	2
○ 26	SUWG3020A	Bracket	2
○ 27	SUWG3010A	Bracket	2
○ 28	SUWG3030A	Bracket	2
○ 29	SWKG1346ZA	Cable with Bracket	1
○ 30	SWKG1347ZA	Cable with Bracket	1
30-1	SHRG1160A	Bushing	2
○ 31	SGXG2860A	Front Panel	1
○ 31 [M]	SGXG2861A	Front Panel	1
32	SHSG3050A	Felt	1
33	SGXG1100K	Ornament, Expression	1
33 [M]	SGXG1100A	Ornament, Expression	1
34	SHRG2120C	Foot	4
○ 34 [M]	SHRG2120A	Foot	4
○ 35	SMKG1583A	Jack Panel	1
36	SHR401-1	Latch	2
37	SXVG3031B	Knee Lever Ass'y	1
37-1	SSLG1005A	Leaf Switch	1
37-2	SSHG1020A	Push Switch	1
○ 38	SKEG7640A	Guide Rail	1
○ 39	SKEG7650A	Guide Rail	1
○ 40	SKEG7660A	Guide Rail	1
○ 41	SKEG7670A	Guide Rail	1
○ 42	SHSG3571A	Felt	2
43	SHRG1110A	Cord Clamper	1
44	SHRG1120A	Cord Clamper	1
45	SHRG8130A	Speaker Cover	1
46	SHSG9140A	Sound Absorbing Material	3
47	SXVG6010B	Expression Pedal Ass'y	1
47-1	XAMR55P	Lamp	1
47-2	RJS205ZA	Lamp Socket	1
47-3	SHGG908	Lamp Holding Rubber	1
47-4	SSHG14	Foot Switch	2
○ 48 [E]	SKZG7780A	Rear Board (Upper), European areas	1
○ 48 [EK] [X] [XL] [XR] [XS]	SKZG7781A	Rear Board (Upper)	1
○ 48 [M]	SKZG7800A	Rear Board (Upper)	1
○ 49	SYUG1170A	Rear Board (Lower)	1
50	SHRG1030A	Cord Band	1
51	SHRG1070A	Cord Clamper	1
52	SHRG9620A	Cord Clamper	1
○ 53	SHRG9920A	Spacer	1
54	SBNG7031A	Knob	2
55	SBNG4010A	Mic Volume Knob	1
56	SBCG110B	Button, Power SW	1
○ 57	SKEG1240A	Cover	1
○ 58	SUWG2980A	Bracket	1

PEDAL KEYBOARD

Ref. No.	Part No.	Description	Per/Set
59	STBG1163C	White Key (Gray)	8
59 [M]	STBG1163A	White Key (Brown)	8
60	STBG2052A	Black Key	5
61	STBG2310A	Full-Base Pedal	1
62	SGXG1390A	Ornament	1
63	SHGG50A	Rubber Switch (5 continuous)	3
64	SHSG4770A	Felt	1
65	SHSG1600B	Felt	1
66	SHSG1460A	Felt	14
67	SUSG180A	Spring	14
68	SHGG8130A	Rubber	14
69	SHRG9240A	Spacer	14

MANUAL KEYBOARD

Ref. No.	Part No.	Description	Per/Set
70	STBG1100A	White Key (C & F Keys)	2
71	STBG1110A	White Key (D Key)	8
72	STBG1120A	White Key (E & B Keys)	16
73	STBG1130A	White Key (G Key)	8
74	STBG1140A	White Key (A Key)	8
75	STBG1150A	White Key (Top Octave C Key)	2
76	STBG2070A	Black Key	40
77	SUSG270A	Spring	98
78	SHGG9050A	Key Guide Rubber	98
79	SHSG1930A	Felt	4
80	SSPG6001A	Rubber Switch (6 continuous)	14
81	SSPG7001A	Rubber Switch (7 continuous)	2

DIGITAL DISK RECORDER

Ref. No.	Part No.	Description	Per/Set
○ 82 [M]	SFDG20A	Digital Disk Recorder Ass'y	1
○ 83 [M]	SUVG1190A	Cover	1
○ 84 [M]	SHRGA5580A	Insulator	1
○ 85 [M]	SUVG1180A	Cover	1
86 [M]	SHRG9490A	P.C.B. Holder	2

BENCH (Except [M] area)

Ref. No.	Part No.	Description	Per/Set
87	SKZGC560A	Top Cover Ass'y	1
88	SKZGC471B	Leg	4
89	SBEG190A	Spanner	1

BENCH (Products for [M] area)

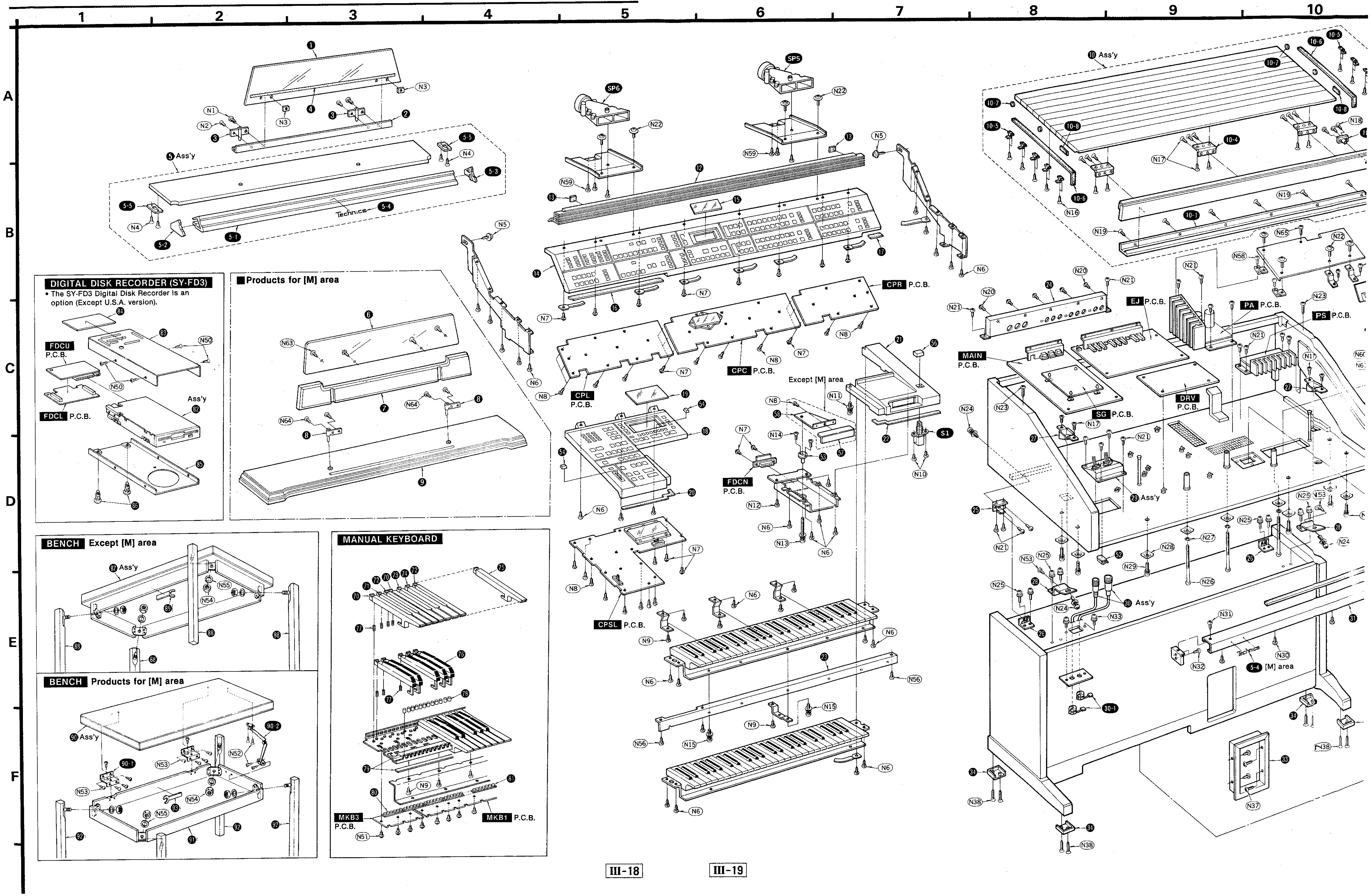
Ref. No.	Part No.	Description	Per/Set
90 [M]	SKZGC580A	Top Cover Ass'y	1
90-1 [M]	SBHG50B	Hinge	2
90-2 [M]	SBLG70A	Stay	1
91 [M]	SKZGC860A	Box	1
92 [M]	SKZGC471C	Leg	4
93 [M]	SBEG190A	Spanner	1

SCREWS & WASHERS

Ref. No.	Part No.	Description	Per/Set
N1	XSB4+8FZ	Screw	2
N2	XTB3+8JFZ	Screw	2
N3	SNEG260B	Nut	2
N4	XTS35+20A	Screw	4
○ N5	SNEG2400A	Screw with Washer	2
N6	XTB4+12A	Screw	28
N7	XTW3+10QFVC	Screw	18
N8	XTV3+10G	Screw	41
N9	XTB3+5C	Screw	12
N10	SNEG740A	Screw	2
N11	XYN4+F10	Screw with Washer	1
N12	XTB4+8B	Screw	2
N13	XYN4+F40	Screw with Washer	1
N14	XTS3+6B	Screw	2
N15	XYN5+C10	Screw with Washer	2
N16	XTS4+12A	Screw	20
N17	XTS35+12A	Screw	19
N18	XTB3+10A	Screw	3
N19	XTS3+10AFVC	Screw	6
N19 [M]	XTB3+10AFZ	Screw	6
○ N20	XTW3+10JFVC	Screw	5
N21	XTB35+12A	Screw	30
○ N22	XTWSG2	Screw	8
N23	XTT4+30A	Screw	2
○ N24	SNEG2270A	Screw with Washer	4
N25	XYN4+F20FZ	Screw with Washer	12
N26	SNEG1380B	Screw	3
N27	XWA5BFZ	Washer	3
N28	SNEG150B	Washer	9
N29	XYN5+C30FZ	Screw with Washer	6
N30	XTT35+10AFVC	Screw	6
N31	XTB3+8BFVC	Screw	2
N32	XTB35+20A	Screw	12
N33	XYN3+F20FZ	Screw with Washer	2
N34	XYN3+C12	Screw with Washer	3
N35	XTN2+10FFX	Screw	1
N36	XYN3+F16FZ	Screw with Washer	2
N37	XTB3+14AFZ	Screw	4
N37 [M]	XTB3+14AFVC	Screw	4
N38	XTB35+25A	Screw	8
N39	XTT4+16A	Screw	6
N40	XYN4+F14	Screw with Washer	4
N41	XTB35+30A	Screw	2
N42	XTT4+14A	Screw	13
N43	SNE499-1	Nut	12
N44	XTN26+6B	Screw	2
N45	XTT4+30AFVC	Screw	18
N46	XTT4+16AFVC	Screw	6
N47	XTB3+6B	Screw	11
N48	XNG5BS	Nut	14
N49	SNEG360A	Screw	14
N50	XSS3+6FZ	Screw	4
N51	XTW3+10T	Screw	13
N52	XTS3+14A	Screw	4
N53	XTB35+14AFZ	Screw	12
N54	XNH10G	Nut	4
N55	XWB10B	Washer	4
N56	XTT4+10A	Screw	3
N57	XTV3+10G	Screw	2
N58	XTV3+10C	Screw	4
N59	XTB4+8A	Screw	6
N60	SNEG770A	Washer	2
N61	XNS12FZ	Nut	2
N62	SNE4021-1	Nut	1
N63	XTT4+14AFVC	Screw	4
N64	XTB3+14AFVC	Screw	4
N65	XTT4+12A	Screw	1

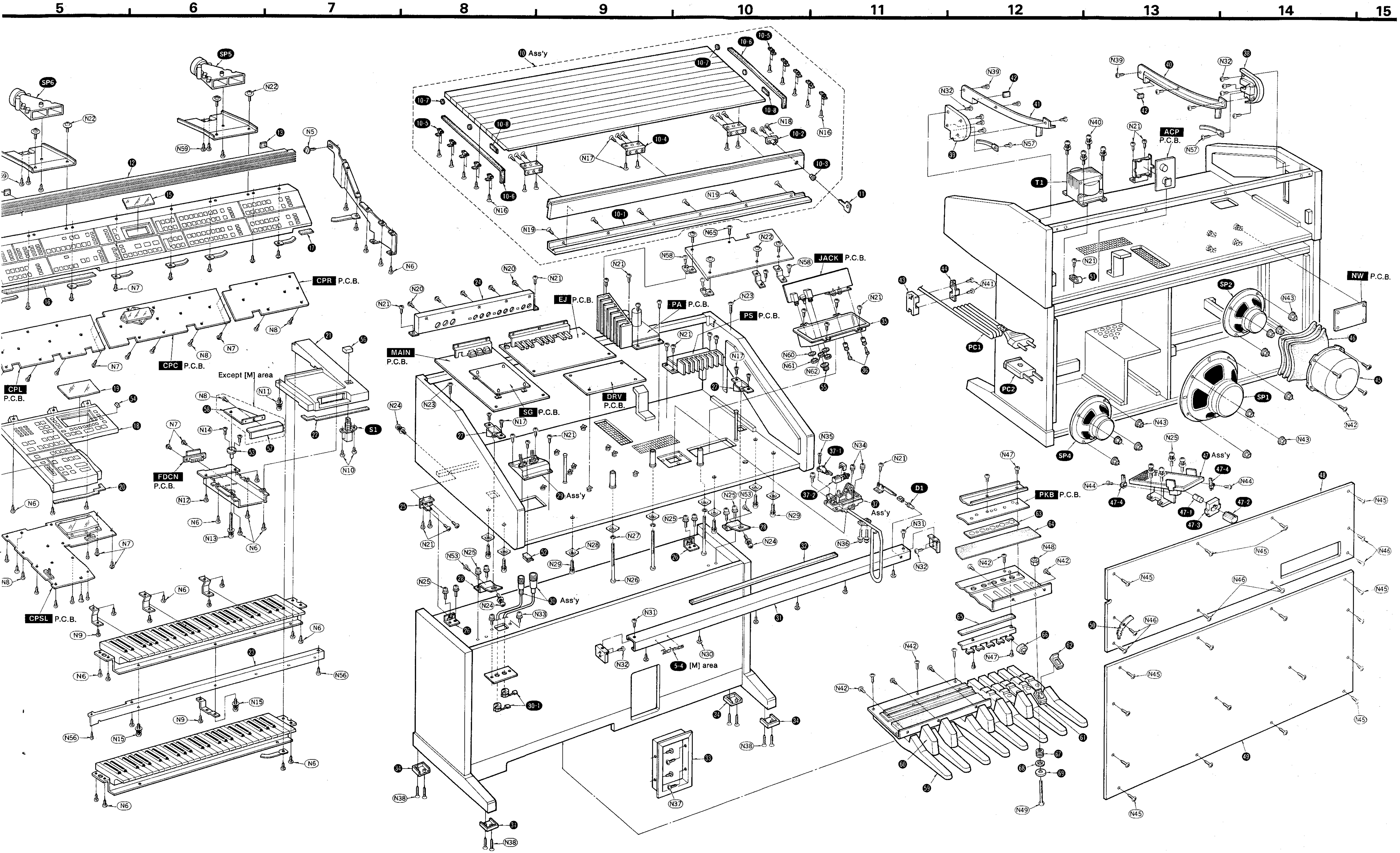
EXPLODED VIEWS OF CABINET

Note: The cabinet assembly parts will not be supplied as repair parts.

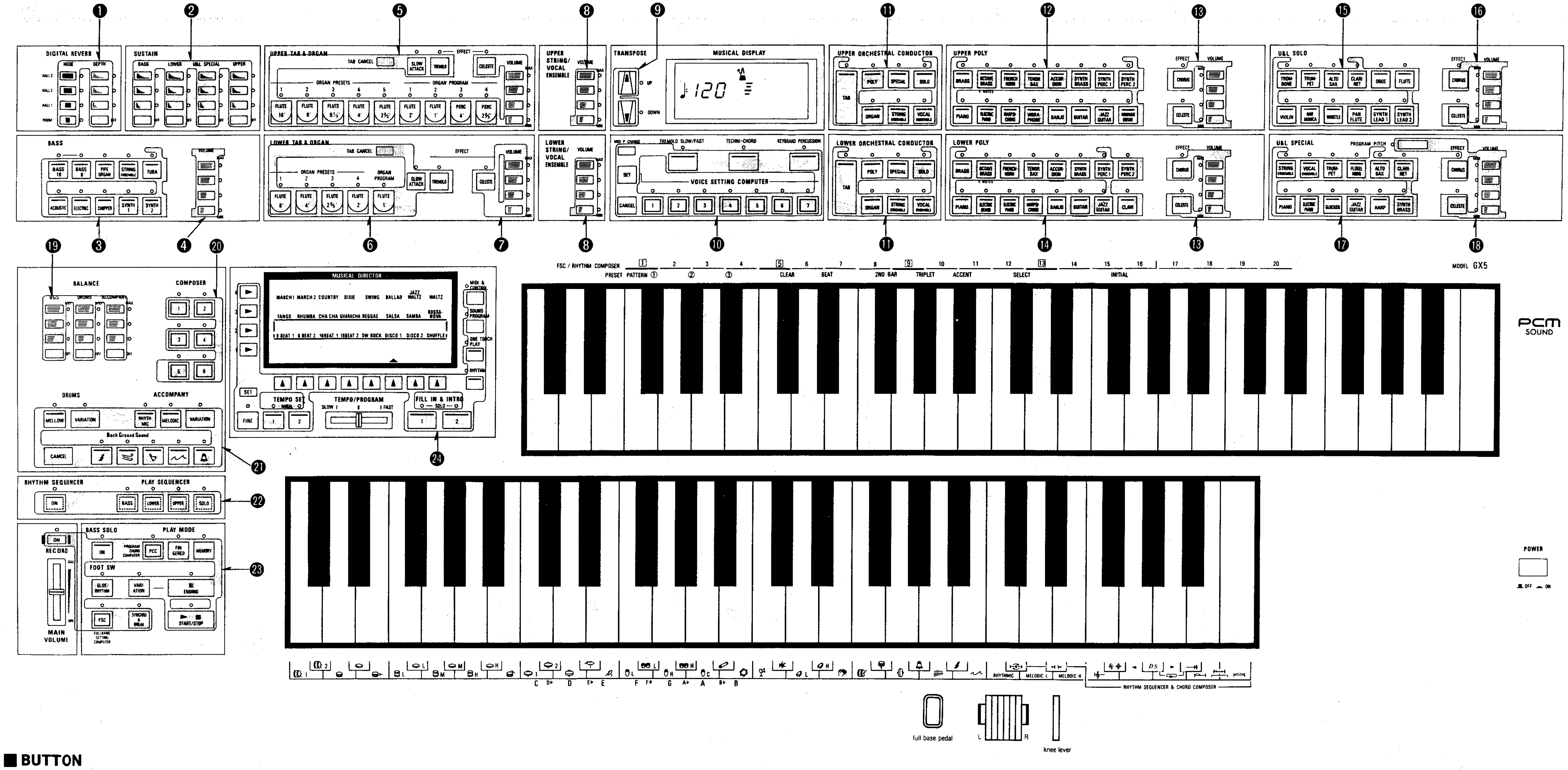

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
5 Ass'y
Technics
10 Ass'y
SP5
SP6
CPR P.C.B.
CPC P.C.B.
CPL P.C.B.
EJ P.C.B.
PA P.C.B.
PS P.C.B.
MAIN P.C.B.
SG P.C.B.
DRV P.C.B.
FDCN P.C.B.
CPSL P.C.B.
Except [M] area
S1
23 Ass'y
30 Ass'y
5-4 [M] area
DIGITAL DISK RECORDER (SY-FD3)
FDCU P.C.B.
FDCL P.C.B.
Ass'y
Products for [M] area
BENCH Except [M] area
87 Ass'y
BENCH Products for [M] area
90 Ass'y
MANUAL KEYBOARD
MKB3 P.C.B.
MKB1 P.C.B.

• The SY-FD3 Digital Disk Recorder is an option (Except U.S.A. version).

Note: The cabinet assembly parts will not be supplied as repair parts.

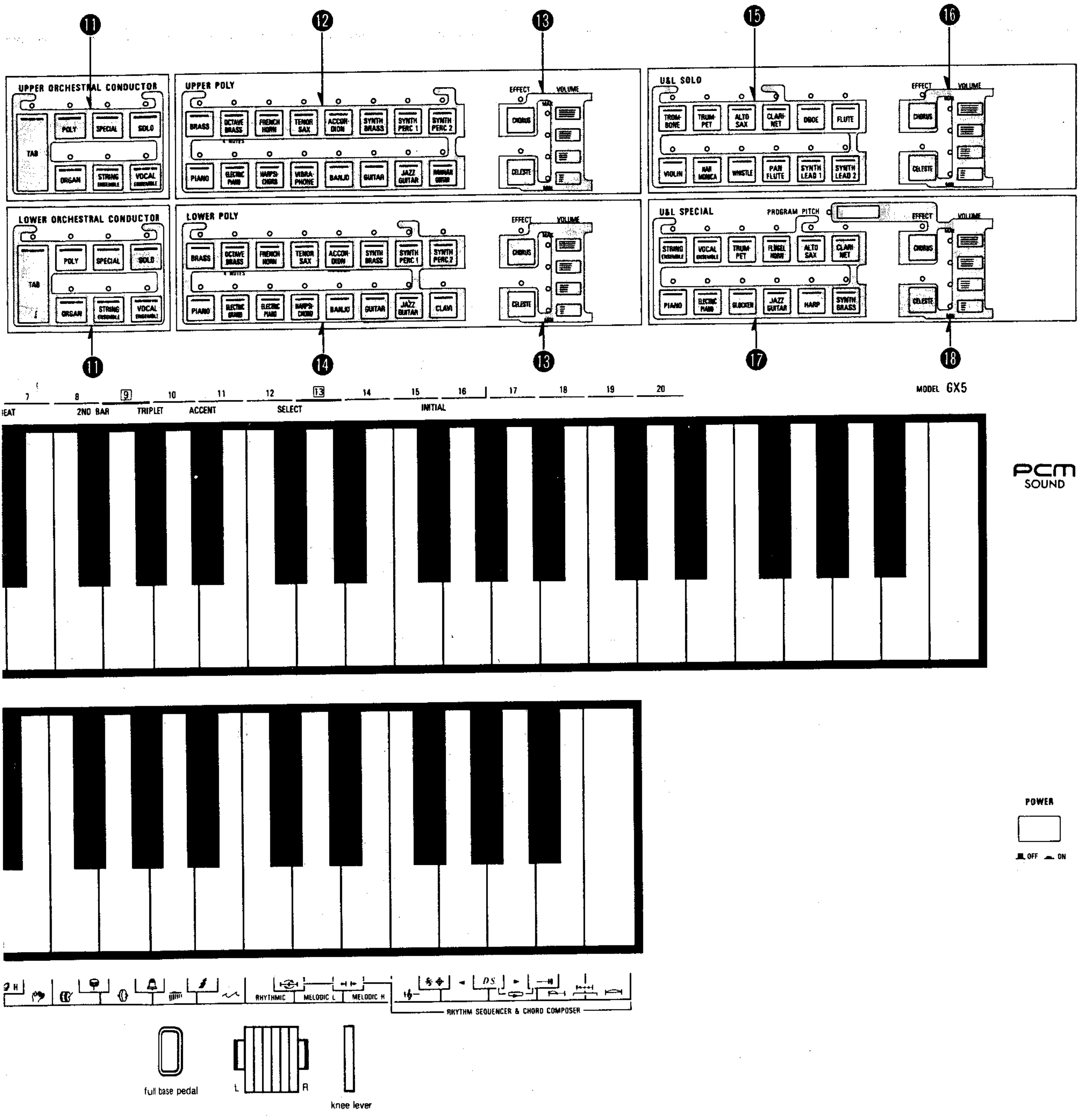

5
6
7
8
9
10
11
12
13
14
15
SP6
SP5
N22
N59
13
12
15
17
16
N5
N6
CPR P.C.B.
N7
N8
CPC P.C.B.
CPL P.C.B.
19
18
54
20
Except [M] area
N11
58
N14
53
57
S1
N10
N7
FDCN P.C.B.
N12
N13
N6
N9
CPSL P.C.B.
23
N15
N56
N6
21
56
22
N24
MAIN P.C.B.
10 Ass'y
10-1
10-2
10-3
10-4
10-5
10-6
10-7
10-8
11
N16
N17
N18
N19
N20
N21
24
EJ P.C.B.
PA P.C.B.
PS P.C.B.
JACK P.C.B.
N23
N58
N65
N60
N61
N62
55
35
36
SG P.C.B.
DRV P.C.B.
27
29 Ass'y
25
26
28
52
N25
N26
N27
N28
N29
N53
30 Ass'y
30-1
N33
N31
N32
N30
5-4 [M] area
31
32
34
33
N37
N38
N35
N34
37-1
37-2
37 Ass'y
N36
D1
N39
N40
N41
N42
N43
N57
38
39
40
41
42
43
44
ACP P.C.B.
T1
PC1
PC2
51
NW P.C.B.
SP1
SP2
SP4
45
46
47 Ass'y
47-1
47-2
47-3
47-4
N44
PKB P.C.B.
63
64
N47
N48
65
66
62
61
60
59
67
68
69
N49
48
49
50
N45
N46

■ BUTTON

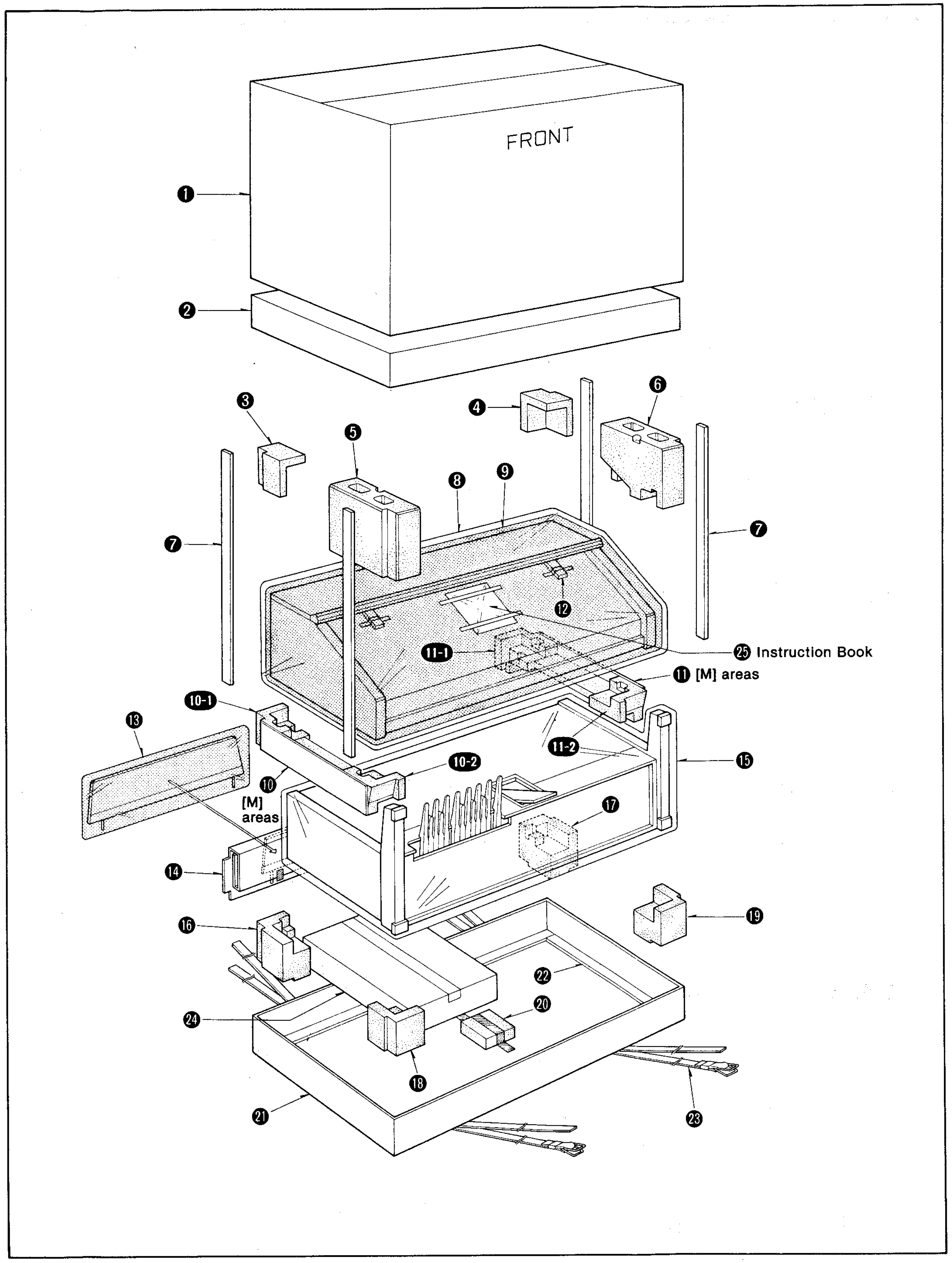

❶
❷
❺
❽
❾
⓫
⓬
⓭
⓯
⓰
DIGITAL REVERB
SUSTAIN
UPPER TAB & ORGAN
UPPER STRING/VOCAL ENSEMBLE
TRANSPOSE
MUSICAL DISPLAY
UPPER ORCHESTRAL CONDUCTOR
UPPER POLY
U&L SOLO
BASS
LOWER TAB & ORGAN
LOWER STRING/VOCAL ENSEMBLE
VOICE SETTING COMPUTER
LOWER ORCHESTRAL CONDUCTOR
LOWER POLY
U&L SPECIAL
❸
❹
❻
❼
❽
❿
⓫
⓮
⓭
⓱
⓲
⓳
⓴
BALANCE
COMPOSER
MUSICAL DIRECTOR
DRUMS
ACCOMPANY
Back Ground Sound
TEMPO SET
TEMPO/PROGRAM
FILL IN & INTRO
FSC / RHYTHM COMPOSER
PRESET PATTERN
MODEL GX5
PCM SOUND
㉑
㉔
RHYTHM SEQUENCER
PLAY SEQUENCER
㉒
BASS SOLO
PLAY MODE
RECORD
FOOT SW
MAIN VOLUME
㉓
POWER
full base pedal
L
R
knee lever

■ BUTTON

	Ref. No.	Part No.	Description	Per/Set
○	1	SBCG410A	Button, Digital Reverb	1
○	2	SBCG420A	Button, Sustain	1
○	3	SBCG431A	Button, Bass	1
○	4	SBCG432A	Button, Bass Volume	1
○	5	SBCG441A	Button, Upper Tab & Organ	1
○	6	SBCG451A	Button, Lower Tab & Organ	1
○	7	SBCG452A	Button, Effect, Volume	1
○	8	SBCG461A	Button, String/Vocal Ensemble	2
○	9	SBCG470A	Button, Transpose	1
○	10	SBCG480A	Button, Voice Setting Computer	1
○	11	SBCG490A	Button, Orchestral Conductor	2
○	12	SBCG501A	Button, Upper Poly	1
○	13	SBCG502A	Button, Effect, Volume	2
○	14	SBCG511A	Button, Lower Poly	1
○	15	SBCG521A	Button, U & L Solo	1
○	16	SBCG522A	Button, Effect, Volume	1
○	17	SBCG531A	Button, U & L Special	1
○	18	SBCG532A	Button, Effect, Volume	1
○	19	SBCG540A	Button, Balance	1
○	20	SBCG550A	Button, Composer	1
○	21	SBCG560A	Button, Drums, Accompany, BGS	1
○	22	SBCG570A	Button, Rhythm Sequencer, Play Sequencer	1
○	23	SBCG580A	Button, Record, Play Mode, etc.	1
○	24	SBCG590A	Button, Musical Director, etc.	1


⓫
⓬
⓭
⓯
⓰
UPPER ORCHESTRAL CONDUCTOR
TAB
POLY
SPECIAL
SOLO
ORGAN
STRING ENSEMBLE
VOCAL ENSEMBLE
UPPER POLY
BRASS
OCTAVE BRASS
FRENCH HORN
TENOR SAX
ACCOR-DION
SYNTH BRASS
SYNTH PERC 1
SYNTH PERC 2
4 NOTES
PIANO
ELECTRIC PIANO
HARPSI-CHORD
VIBRA-PHONE
BANJO
GUITAR
JAZZ GUITAR
HAWAIIAN GUITAR
EFFECT
VOLUME
CHORUS
CELESTE
U&L SOLO
TROM-BONE
TRUM-PET
ALTO SAX
CLARI-NET
OBOE
FLUTE
VIOLIN
HAR MONICA
WHISTLE
PAN FLUTE
SYNTH LEAD 1
SYNTH LEAD 2
LOWER ORCHESTRAL CONDUCTOR
LOWER POLY
CLAVI
U&L SPECIAL
PROGRAM PITCH
FLÜGEL HORN
GLOCKEN
HARP
⓫
⓮
⓭
⓱
⓲
7
8
9
10
11
12
13
14
15
16
17
18
19
20
EAT
2ND BAR
TRIPLET
ACCENT
SELECT
INITIAL
MODEL GX5
PCM SOUND
POWER
OFF ON
RHYTHMIC
MELODIC L
MELODIC H
DS
RHYTHM SEQUENCER & CHORD COMPOSER
full base pedal
L
R
knee lever

PACKING


FRONT
❶
❷
❸
❹
❺
❻
❼
❽
❾
❼
⓬
⓫-1
㉕ Instruction Book
⓫ [M] areas
❿-1
⓭
❿-2
⓫-2
⓯
❿
[M] areas
⓱
⓮
⓳
⓰
㉒
⓴
㉔
⓲
㉑
㉓

PACKING PARTS (Except [M] area)

Ref. No.	Part No.	Description	Per/Set
○ 1	SPNG1992A	Carton Box	1
○ 2	SPNG1994A	Top Case	1
○ 3	SPNG5747A	Pad	1
○ 4	SPNG5748A	Pad	1
○ 5	SPNG5745A	Pad	1
○ 6	SPNG5746A	Pad	1
○ 7	SPNG3109A	Prop	4
8	SPHG220A	Polyethylene Bag	1
9	SPHG620A	Protection Sheet	1
○ 10-1	SPNG5743A	Pad	1
○ 10-2	SPNG5741A	Pad	1
○ 11-1	SPNG5744A	Pad	1
○ 11-2	SPNG5742A	Pad	1
12	SPNG5161A	Spacer	2
○ 13	SPHG610A	Protection Sheet	1
○ 14	SPNG1996A	Sleeve, Music Rack	1
15	SPHG770A	Polyethylene Bag	1
○ 16	SPNG5739A	Pad	1
○ 17	SPNG5740A	Pad	1
○ 18	SPNG5737A	Pad	1
○ 19	SPNG5738A	Pad	1
○ 20	SPNG5749A	Pad	1
○ 21	SPNG1995A	Bottom Case	1
○ 22	SPNG3108A	Frame	1
23	SPSG40A	Band	4
○ 24	SPEG1167A	Packing Case, Bench	1
INSTRUCTION BOOK			
○ 25	SQFGA840	Instruction Book, [EN] area	1
○ 25	SQFGA890	Instruction Book, [MC], [EK], [EP], [X], [XL], [XR], [XS] areas	1
○ 25	SQFGA1060	Instruction Book, [EZ], [EI], [EB], [EF], [EW], [EH] areas	1
○ 25	SQFGA930	Instruction Book, [PA] area	1

PACKING PARTS (M area)

Ref. No.	Part No.	Description	Per/Set
○ 1	SPNG2017A	Carton Box	1
○ 2	SPNG2021A	Top Case	1
○ 3	SPNG5747A	Pad	1
○ 4	SPNG5748A	Pad	1
○ 5	SPNG5769A	Pad	1
○ 6	SPNG5770A	Pad	1
○ 7	SPNG3113A	Prop	4
8	SPHG220A	Polyethylene Bag	1
9	SPHG620A	Protection Sheet	1
○ 10	SPNG5773A	Pad Ass'y	1
○ 11	SPNG5774A	Pad Ass'y	1
12	SPNG5161A	Spacer	2
○ 13	SPHG610A	Protection Sheet	1
○ 14	SPNG2024A	Sleeve, Music Rack	1
15	SPHG770A	Polyethylene Bag	1
○ 16	SPNG5779A	Pad	1
○ 17	SPNG5780A	Pad	1
○ 18	SPNG5737A	Pad	1
○ 19	SPNG5738A	Pad	1
○ 20	SPNG5749A	Pad	1
○ 21	SPNG2023A	Bottom Case	1
○ 22	SPNG3111A	Frame	1
23	SPSG40A	Band	4
24	SPEG1168A	Packing Case, Bench	1
INSTRUCTION BOOK			
○ 25 M	SQFGA880	Instruction Book	1